LITTLE TENNESSEE RIVER BASIN

AND

SAVANNAH RIVER DRAINAGE AREA POLLUTION SURVEY REPORT

1960

NORTH CAROLINA
STATE STREAM SANITATION COMMITTEE

. . . . . .

STATE DEPARTMENT OF WATER RESOURCES
DIVISION OF STREAM SANITATION AND HYDROLOGY
RALEIGH

POLLUTION SURVEY
REPORT NO 9

THE LITTLE TENNESSEE RIVER BASIN

AND

SAVANNAH RIVER DRAINAGE AREA

A study of existing pollution in the Little Tennessee River Basin and Savannah River Drainage Area together with recommended classifications of their waters.

1958 1959

STATE STREAM SANITATION COMMITTEE

NORTH CAROLINA STATE DEPARTMENT OF WATER RESOURCES
DIVISION OF STREAM SANITATION & HYDROLOGY
RALEIGH, NORTH CAROLINA

C O N T E N T S

INTRODUCTION

A survey of the surface waters of the Little Tennessee River Basin, including those of the Savannah River Drainage Area, has been prepared to fulfill the requirements of Section 143-215 of Article 21 of the General Statutes of North Carolina. The area covered by these studies includes those portions of the watersheds of the Little Tennessee River and of the Savannah River which are located in the State of North Carolina. The "Savannah River Drainage Area", which will be considered in a separate section of this report, includes the watersheds of Overflow Creek, Clear Creek, Chattooga River, Whitewater River, Thompson River, Horsepasture River and Toxaway River. The areas included are shown on maps Nos. 1 and 2, entitled "Little Tennessee River Basin And Savannah River Drainage Area".

The data on which this report is based have been developed through actual laboratory studies of existing stream conditions, engineering surveys of municipal and industrial water supplies and waste treatment facilities, from information obtained from existing files, conferences with persons well acquainted with the area, and visits to the sites under study. Data covering stream flow and drainage areas were furnished by the North Carolina District Office, Geological Survey of the United States Department of Interior, under terms of a cooperative agreement between that office and the State Stream Sanitation Committee. Other Federal, as well as State, County, and Municipal agencies have been of considerable assistance in furnishing data regarding land and stream uses.

The laboratory studies on the Little Tennessee River Basin were begun in June, 1958, with the laboratory based at Bryson City, and concluded in October of the same year. The laboratory studies on the Savannah River Drainage Area were carried out from July to September of 1959 from a laboratory based at Tryon. Following the stream study, the data herein were compiled.

This report presents information about stream conditions, usage of water resources in the areas, sources from which pollution is discharged into these waters, and pollution prevention measures prevailing during the period of study, together with recommended classifications for the waters of the areas described therein.

During these studies and preparation of this report, a sincere effort has been made to present a true picture of the complex water pollution problems within the areas. Likewise, a conscientious effort has been made toward developing reasonable conclusions and recommendations pertaining to the recommended classifications of the various waters of the areas included within this report. It is hoped that this report will be useful to all concerned with the problem of safeguarding the water resources of the Little Tennessee River Basin and the Savannah River Drainage Area.

ACKNOWLEDGMENT

The valuable co-operation and assistance of those agencies and individuals, which have contributed to the studies of the Little Tennessee River Basin and the Savannah River Drainage Area and to the preparation of this report, are gratefully acknowledged.

Special recognition is given to the officials of industries and municipalities throughout the areas who furnished data relative to plant operation, waste discharges and treatment facilities employed. Recognition is also given to the Laboratory of Hygiene of the State Board of Health at Raleigh; Mr. Ray of Ray's Esso Service Station at Bryson City for furnishing space for the mobile laboratory unit; the Board of Commissioners of Swain County and Swain County Health Department for furnishing power; and, to Mr. James Myers for supplying water for the operation of the laboratory.

Federal, State and private agencies from which co-operation and assistance were obtained include the Geological Survey; the Forest Service and the National Park Service of the United States Department of Interior; the United States Department of Agriculture, Soil Conservation Service; the North Carolina Wildlife Resources Commission; the North Carolina Department of Conservation and Development, Commerce and Industry Division; and the State Board of Health. Assistance was also rendered in many instances by the County and District Health Departments; County Departments of Agriculture; and other agencies and individuals interested in preserving and developing our water resources. Their assistance is hereby acknowledged.

SUMMARY

This report has been prepared to fulfill the requirements of Section 143-215 of Article 21 of the General Statutes of North Carolina. For convenience, and in view of the fact that the mountainous sections of North Carolina have many common characteristics, the small section of the State lying within the Savannah River watershed and known as the Savannah River Drainage Area, has been included in this report, together with the adjoining Little Tennessee River Basin. The findings in the Basin and the Drainage Area are summarized as follow:

Little Tennessee River Basin

The area covered by this section of the report, encompassing approximately 1,804 square miles in North Carolina, lies between the French Broad River Basin on the East, the Hiwassee River Basin on the West, the North Carolina-Georgia State Line and the Savannah River Drainage Area on the South, and the North Carolina-Tennessee State Line on the North. The estimated population in 1950 was 55,000.

Water uses in the Basin include domestic and industrial water supplies; bathing and other forms of recreation; fish and wildlife propagation; agriculture, including irrigation in small measure and stock watering; electric power production; disposal of sewage and industrial waste; and navigation by small craft.

There are within the Basin 9 public and semi-public water supplies, of which two are supplemented with water from wells, serving a maximum estimated population of 16,232 with about 1.535 MGD. In addition, three communities use ground water sources to supply a maximum estimated population of 5,582 with approximately 0.373 MGD. Industries, other than mining and those producing hydroelectric power, report a use of 3.712 MGD from two surface water supplies and 5,000 GPD from one ground water supply. Four mining operations use an unmeasured amount of water from surface sources, while 12 hydroelectric power installations use some 7,700 MGD from various reservoirs or combinations of reservoirs. Two such installations use an unknown amount of water.

The survey showed that there are 19 significant sources of pollution in the Basin, exclusive of untreated sewage from four schools. Four consist of mining waste, largely inorganic in character, while 15, including the treated and untreated waste from the Town of Franklin as two sources, are organic in character and consist of domestic sewage and/or industrial waste from municipalities, villages, Western Carolina College, and industries. In addition, the indiscriminate discharge of untreated or inadequately treated domestic sewage from private outfalls to receiving waters in or near the Town of Webster and the communities of Ela, Governors Island, Bethel and Whittier poses special problems. The 15 significant sources of organic pollution have a total summer season flow of some 5.03 MGD, a P.E. of 538,230 before treatment and 532,591 after treatment, which represents an overall reduction of pollution reaching the receiving waters of less than one percent. Since a population of only some 14,283 is served by the several sewage collection systems, the overall stream loading is largely industrial waste. The industrial waste has a P.E. of 523,947, of which a little less than 520,000 is due to the manufacturing of paper at the Mead Corporation-Sylva Division. Only seven sources of pollution have treatment and of these, only four are deemed to be adequate at this time for the purposes desired of them.

The Stecoah School in Graham County discharges untreated sewage from an enrollment of 214 to Cody Branch, while the untreated sewage from an enrollment of 220 at the Cullasaja School and an enrollment of 286 at the Nantahala School in Macon County is discharged to Cullasaja River and Partridge Creek respectively. As previously discussed in some detail, the Whittier School discharges the untreated sewage from an enrollment of 291 to Tuckasegee River.

A review of the analytical data for samples of water collected in streams, below 10 of the dams or in the tailrace below the hydroelectric power houses during the regular sampling season in 1958, shows that the minimum observed dissolved oxygen was 5.8 ppm as found in Little Tennessee River at Sampling Station No. 80 below the power house at Lake Cheoah which has two high-level intakes. On October 27, 1958, the North Carolina Wildlife Resources Commission advised this office to the effect that water, low in dissolved oxygen and with color similar to that from paper mill waste, was being discharged from Fontana Lake on this river with possible adverse affects upon the waters in Lake Cheoah which are designated as trout waters by the Commission. Investigation on October 28, 1958 showed that the water in the scrollcase at Fontana Dam, which comes from low-level intakes, had a dissolved oxygen content of only 2.3 ppm, while at Sampling Station No. 63 near the end of the tailrace the dissolved oxygen was 3.1 ppm, the temperature 17°C, and the true color 15 units. This was in contrast to the minimum dissolved oxygen of 6.7 ppm as found at this sampling station during the regular study on September 2, 1958, when the temperature was 17°C and the true color had a value of 9 units. The dissolved oxygen in the water in the penstock just above a turbine at the Lake Cheoah power house on October 28, 1958, was 4.5 ppm when the temperature was 16°C and the true color was 15 units, while the dissolved oxygen at Sampling Station No. 80 on this same day was 5.2 ppm, the temperature 16°C, and the true color 14 units. This was in contrast to a dissolved oxygen content of 5.8 ppm on September 16, 1958, when the temperature was 19°C and the true color was 6 units. A sample collected in the Fontana Dam tailrace, a short distance above Sampling Station No. 63, on December 3, 1958, showed that the dissolved oxygen had reached a value of 7.7 ppm at a time when the temperature was slightly above 13°C and the previously reported discolored water had ceased to exist.

The discolored water in the tailrace below Fontana Dam suggested the presence of a density current flowing through Fontana Lake degradated by waste from upstream sources of pollution. Preliminary studies were conducted in Fontana Lake on October 28 and 29 and again on December 3 and 4, 1958, but, while thermal stratification was demonstrated on both occasions, it was not possible to prove the presence of a density current, although at great depths the dissolved oxygen was found to be much lower than at the surface of the lake. It is noted, however, that the observed pattern was similar to that found by the Tennessee Valley Authority in 1945, and again in 1946, and as further demonstrated in 1955.[1] Studies conducted by the Authority in 1955, when water low in dissolved oxygen was being discharged from Fontana Dam, indicated that there was appreciable reaeration in Lake Cheoah. This was confirmed by studies conducted by this office in 1958. The absence of reported fish kills, attributable to a deficiency of dissolved oxygen, indicates that the overall conditions in Lake Cheoah are such as to sustain fish life.

(1) Effects of Storage Impoundments on Water Quality, By Milo A. Churchill, A. M. ASCE, Paper No. 2928, Reprinted from TRANSACTIONS, Vol. 123, 1958, p. 419, American Sociery of Civil Engineers.

Savannah River Drainage Area

The Savannah River Drainage Area, which is located in North Carolina between the lower portions of the French Broad and Little Tennessee River Basins and the North Carolina-Georgia and North Carolina-South Carolina State Lines, encompasses an area of only 151 square miles. This small area, which drains to the Savannah River in South Carolina, is strictly rural in character and has an estimated population of 1,500 which, however, is increased in the summer by those owning summer homes and by tourists.

Water uses in this Drainage Area include domestic and industrial water supplies; agriculture, stock watering; bathing and other forms of recreation; fish and wildlife propagation; and disposal of a relative small amount of organic waste from the Cashiers Valley Mink Farms.

There are within this Drainage Area two semi-public surface water supplies serving a population of 325 with 30,000 GPD and one semi-public ground water supply which serves a population of 250 with 25,000 GPD which are worthy of mention. The Cashiers Valley Mink Farms secures an unknown amount of water from a well which is used for both domestic and industrial purposes. In addition, this same management uses water from Logan Creek and East Fork Chattooga River for trout hatcheries.

Fairfield Lake and Hampton Lake are used for bathing by Camp Merrie-Woode and High Hampton Inn and Country Club respectively. The Sapphire Valley Golf Club uses water from Intake Branch for irrigating the greens.

Only two sources of pollution were found at the time of the survey. Partially treated sewage was being discharged into Fairfield Lake from the Sapphire Valley Inn prior to the start of the stream sampling program. The management, on being advised of this unsatisfactory condition, took prompt measures to revamp the sewage treatment system and thereafter no sewage was permitted to enter the lake. Samples of water collected in the stream below the lake did not show any evidence of the previous pollution. The other source of pollution was the effluent from the industrial waste treatment system at the Cashiers Valley Mink Farms. Since review of the analyses collected from the stream below the point of waste discharge did not appear to interfere with existing and potential downstream uses made of this stream, this pollution was not deemed to be serious under the conditions existing during the study.

CONCLUSIONS

Little Tennessee River Basin

The unparalled beauty of the mountain scenery of the Little Tennessee River Basin is to Western North Carolina what the "Outer Banks" is to Eastern North Carolina and together, they provide a virtual paradise for the tourist. Each has its advantages and allurements. Just as the Atlantic Ocean, the sounds, the bays, the lakes, and the rivers, where undefiled by man, complement the beauty of the "Outer Banks", so do the swift running rivers and smaller streams and the large man-made reservoirs or lakes complement the beauty of the mountains. The waters of the Little Tennessee River Basin not only add to the attractiveness of the area and its economy through the tourist trade, but benefit the area and its economy in other ways as well. The following conclusions, based upon a careful review of this report, indicate that the full potential of these waters cannot be realized, because of the pollution found therein, until appropriate action is taken by those responsible for the unsatisfactory conditions:

1. A large, if not the largest factor in the economy of the Little Tennessee River Basin is the tourist industry. The production of paper from pulpwood and the utilization of other forest products rank high in the Basin's economy. The development of the mineral resources of the Basin also is important to this area. While agricultural pursuits are not as extensive in this Basin as in some of the other river basins in this State, they, too, have their place in adding to the livelihood of the inhabitants. All of these activities are in some manner benefited by the water resources of the Basin and by judicious use of the waters, each of these activities can continue to function to the mutual advantage of all.

2. Scott Creek and Tuckasegee River below this Creek are the most heavily polluted streams in the Basin. The Creek is first fouled intermittently by waste from a gravel-washing operation, after which it is very heavily polluted by untreated sewage from the Towns of Sylva and Dillsboro, and private residences as well as by both untreated sewage and industrial waste from The Mead Corporation Paper Mill. Tuckasegee River, the largest tributary to Little Tennessee River, below Scott Creek, is seriously polluted by the waste in this Creek and as it flows to Fontana Lake, it receives additional pollution by discharge of untreated sewage from numerous private residences, a public school, and the Town of Bryson City.

3. Little Tennessee River, below Cullasaja River, is seriously polluted by inadequately treated sewage and industrial waste, while some of its other tributaries are polluted by untreated or inadequately treated sewage.

4. Mirror Lake, on Mill Creek and Cullasaja River, is so badly polluted by inadequately treated sewage as to be unsafe for bathing and is definitely a public health hazard.

5. The indiscriminate discharge of untreated or inadequately treated sewage from private residences either adds pollution to already degraded streams or creates local nuisances and health hazards.

6. In addition to Scott Creek, Little Tennessee River, Nantahala River, and Caler Fork Creek are adversely affected by waste from mining activities.

7. The rate of municipal and industrial pollution abatement action has not kept pace with population and industrial growth as emphasized by the fact that the overall reduction in population equivalent (P.E.) by treatment within the entire Basin is less than one percent.

8. All Municipalities, other governmental agencies, and industries should provide adequate treatment facilities, where required to protect downstream beneficial uses. In this connection, where there is indiscriminate pollution of streams by sewage from private residences in the more populated unsewered areas, the local health departments should encourage the construction of community sewage collection and treatment facilities and if this is not feasible, they should then require the owners of private residences to construct their own treatment facilities. The respective County Boards of Education should provide adequate treatment for all untreated sewage presently discharged from schools and should prevent new discharges of raw sewage in the future.

9. Sports fishing is one of the favorite forms of recreation in the Basin with mountain trout being the most highly prized of the catches. Where streams are designated as "trout waters" by the North Carolina Wildlife Resources Commission, they should be protected by appropriate classifications. In this connection, Lake Cheoah has been designated as "trout waters" by the Commission which has expressed concern over the low quality of water discharged from Fontana Dam into this lake in the Fall of the year. As noted in the summary, the absence of reported fish kills, attributable to a deficiency of dissolved oxygen, indicates that the overall quality of the water in Lake Cheoah is such as to sustain fish life, including trout.

10. The recommended classifications, as shown in Table 10, should be adopted and the applicable water quality standards maintained for the protection of the "best usage" being made of the waters now or contemplated in the forseeable future.

Savannah River Drainage Area

The beauty of the mountainous terrain in the Savannah River Drainage Area rivals that of the Little Tennessee River Basin and likewise appeals to the tourist. The waters in this Drainage Area, as yet not seriously defiled by the activities of man, also complement the attractiveness of the mountains, as do the waters in the above Basin, and otherwise serve those residing in the area. The following conclusions, based upon a careful review of the section of this report reserved for the Savannah River Drainage Area, indicate that the waters therein will continue to serve the people of the area well, if pollution is controlled in the future as it has been in the past.

1. The tourist industry appears to have more impact upon the economy of the area than any other industry or occupation. The clean streams and the presently clean lakes afford many opportunities for relaxation by the tourist.

2. The undefiled waters of Logan Creek and East Fork Chattooga River are used to raise trout for commercial purposes. The industrial waste from the mink farm operated by the same management did not appear to seriously affect the water in Logan Creek under the conditions studied.

3. As noted above, the waters of this Drainage Area will continue to satisfactorily serve the people of the area, if pollution is controlled in the future as it has been in the past.

4. The recommended classifications, as shown in Table 6-S, should be adopted and the applicable water quality standards maintains for the protection of the "best usage" being made of the waters now or contemplated in the forseeable future.

THE SURVEY

Before a study of actual stream conditions could be conducted, a systematic survey was made of the water and land uses throughout the areas included in this report. Investigations of all sources of significant pollution, public, semi-public, and industrial, were included in the survey in order to determine the points of waste discharge and the loadings placed upon the receiving streams. This involved the determination of the volume and characteristics of each significant waste, either treated or untreated, being discharged into the various waters. Pertinent information was obtained from management, such as the use of toxic materials and taste and odor producing substances in manufacturing processes as a guide to the collection of samples for special study. The collection of this voluminous data resulted from numerous field investigations and conferences with individuals familiar with the areas; industrial personnel; Municipal, County, State and Federal Officials representing water use; and health, agriculture, recreation, and wildlife agencies. These data for the Little Tennessee River Basin are listed in Tables Nos. 2, 3, 4, 5, 6, 7 and 8, while the analytical results obtained from the stream studies are listed in Table No. 9. The data for the Savannah River Drainage Area are listed in Tables Nos. 2-S, 3-S, and 4-S, while the analytical results are found in Table No. 5-S.

Sampling Stations and Procedures

The survey included a program of stream sampling over the entire Little Tennessee River Basin and the Savannah River Drainage Area, including all of the major and smaller tributaries that were considered significant to the overall study. This program involved the establishing of sampling stations at sources of public and industrial water supplies, at public outdoor bathing places, and at various points where there is concentrated fishing activity. Particular emphases were placed on those streams receiving appreciable quantities of either sewage or industrial waste; however, sampling stations were also established on streams free from known sources of pollution in order to ascertain background information relative to normal water quality in given areas. Wherever possible, sampling stations were located both above and below sources of pollution and, when necessary, several sampling stations were located below a source of pollution in order to determine the point of maximum oxygen depletion and the point of full oxygen recovery. In some cases, full recovery had not been obtained before the streams received more pollution and suffered further degradation. The sampling stations established in the Little Tennessee River Basin are listed in Table No. 1, together with other pertinent information, while those for the Savannah River Drainage Area are listed in Table No. 1-S.

Samples were collected from streams at points of water use, or below points of pollution after the waste discharges had reasonable opportunity for dilution and mixture with the receiving waters. In each case, every effort was made to obtain as representative a sample as possible. Special equipment was utilized to collect stream samples in conformity with standard procedures. These collecting devices are designed to prevent aeration of samples intended for dissolved oxygen (D.O.) and bio-chemical oxygen demand (B.O.D.) determinations. Apparatus and chemical reagents in appropriate field kits were used by the field crews for the determination of routine tests, such as those for dissolved oxygen and water temperature. Physical features of the streams, such as flow and weather conditions were recorded at the time of sampling. Sampling and field testing operations were conducted in accordance with procedures and methods outlined in "Standard Methods for Examination of Water,

Sewage and Industrial Wastes", Tenth Edition, published by the American Public Health Association, the American Water Works Association, and the Federation of Sewage and Industrial Wastes Associations.

Hydrological Measurements

In order to obtain accurate flow data for the most pertinent sampling stations at the time the samples were taken, the field crews worked with the Raleigh and Asheville offices of the Water Resources Division, Surface Water Branch, of the United States Geological Survey. This was made possible by the cooperative program referred to in the "INTRODUCTION". At each sampling station where a permanent water level measuring device was not located, a temporary reference point was installed and the water stage measured when the sample was taken. These temporary devices consisted simply of a nail, screw or bolt located in a tree or bridge rail over the stream, or a staff gage in a pool upstream from the measuring site. The flows at various stages were actually measured by use of a current meter and these flows were used to make a rating table for that particular station. Other flows were taken from this table. A system of 12 permanent stations and 39 temporary points were used to obtain flows for the entire Basin. At 5 sites flows were obtained from records kept of discharges released through the various hydroelectric power plants located throughout the Basin.

Laboratory Tests and Their Significance

When sampling a stream certain tests must be made at the time of the sampling. These include dissolved oxygen, temperature, and observations connected with sight and smell. Other tests are run in mobile laboratories, the Central Laboratory, and by the State Laboratory of Hygiene in Raleigh. These tests include pH, alkalinity, hardness, chlorides, B.O.D., M.P.N. of coliform bacteria, true color and turbidity, and such other determinations as may be required. The analytical results from these tests are found in Tables 9 and 5-S.

As a background for presentation and discussion of laboratory data, certain rules and regulations were adopted by the State Stream Sanitation Committee for use in classifying and assigning standards of quality and purity to designated waters of the State. For each class of water designated there are accompanying standards of water quality and purity that are applied thereto. The classes for fresh water, such as found in the areas included in this report, are "A-I", "A-II", "B", "C", "D", and "E". A brief explanation of these classes will be found preceding Tables Nos. 10 and 6-S listing the recommended classifications.

Under certain conditions it is necessary to make special tests for specific substances, such as toxic materials; however, in the discussion which follows the requirements for stream waters for various uses are considered in terms of the laboratory tests usually made. As far as practicable and applicable, all chemical and bacteriological examinations were made in accordance with "Standard Methods for Examination of Water, Sewage, and Industrial Wastes", Tenth Edition, as described above. The routine determinations, together with a brief discussion of each, are as follow:

Temperature - The temperature of stream waters is useful in indicating the solubility of gases in it, including the saturation level of dissolved oxygen, the effect of biological activities, and the effect of viscosity on sedimentation. The level of dissolved oxygen varies inversly with the stream temperatures, being lower at high temperatures and vice versa. Temperature has a

marked influence on the rates of natural purification due to biological activity, which is greater at higher temperatures up to about 140°F, and diminishes at lower temperatures. As temperature rises, viscosity decreases with a resulting increase in sedimentation, provided other factors do not interfere. Temperature becomes more important in mountain streams because of the low temperatures necessary to sustain life of certain species of mountain trout.

Turbidity - Turbidity is an index of the density of the suspended matter in a sample and is measured by comparison of a sample with a standard suspension of "Fullers Earth".

True Color - The color of natural water is in general due to microscopic plant growths and contain soluble organic materials. Usually very intense and varied colors are produced by certain industrial wastes, such as dyes, etc. While the apparent color of water is due both to suspended and dissolved matter, the true color is due only to substances in solution. For the purpose of this study, the true color was determined by removing the suspended matter from each sample by centrifugation and determining the color of the supernatant with the aid of an electric colorimeter. The colorimeter was standardized against a series of standard potassium chloroplatinate solutions made up in accordance with "Standard Methods for the Examination of Water, Sewage, and Industrial Wastes", Tenth Edition.

pH Value - The hydrogen-ion concentration of water expressed as pH is a measure of intensity factors of its acidity or alkalinity. Water having a pH of 7.0 is considered neither acid nor alkaline. Higher values indicate the presence of alkaline earth salts and lower values the presence of acids or acid salts. In North Carolina the pH of most of the streams, unaffected by sewage or industrial wastes, will vary from 6.0 to 7.5. Swamp waters and certain other natural waters may have a lower range. For normal fish life the pH range should be within the limits of 4.3 to 8.5, although for mountain trout, a pH range of 6.0 to 7.5 is necessary.

Alkalinity - The alkalinity of natural water represents its content of carbonates, bicarbonates, hydroxides, and sometimes borates, silicates, and phosphates. It is measured by titrating with a standard acid solution to certain standard hydrogen-ion concentrations. The results are expressed in parts per million (ppm) of calcium carbonate. Within normal limits, the alkalinity and hydrogen-ion concentration have little sanitary significance, but they are of value in handling industrial wastes and in controlling the various waste treatment processes.

Hardness - The hardness of natural water consists largely of calcium and magnesium, although measurable concentrations of iron, aluminum, manganese, strontium, and zinc in some waters must be taken into consideration. Hardness is expressed in (ppm) as calcium carbonate and is a measure of the soap-consuming capacity of water. While the hardness of water has no sanitary significance, extremes may indicate the presence of certain types of industrial waste, or intrusion of salt water in the coastal areas. It also has value in the study of the effects of toxic waste.

Chloride (Cl) - The determination of chloride in water or waste is for the purpose of defining the presence or absence of salt. It is expressed in (ppm) in terms of the Cl ion. Normal fresh waters are very low in chlorides and excessive amounts may indicate the presence of sewage or certain types of industrial waste. Water containing chloride in excess of 250 (ppm) is usually

unsatisfactory for public water supply purposes because of the salty taste and may indicate the intrusion of salt water in the coastal areas noted above. The presence of large amounts of chloride in fresh water containing certain types of industrial waste and in brackish or salt water is significant in relation to the solubility of oxygen, as the level of dissolved oxygen in such waters varies inversely with its chloride content.

Dissolved Oxygen (D.O.) - Dissolved oxygen represents the amount of oxygen dissolved in water. This is one of the most valuable analytical measurements of the condition of a given water. Water is saturated when it contains as much oxygen as it can hold under a given temperature and unsaturated when it does not contain as much. Under certain conditions the water can become supersaturated. In relatively clean streams, the dissolved oxygen content tends to remain at or near saturation. Dissolved oxygen is essential to natural purification of the stream as well as maintenance of fish and other aquatic life. In natural streams the dissolved oxygen is used to satisfy the biochemical oxidation of organic wastes, but tends to be replaced by absorption from the atmosphere and by photosynthetic action of certain green plants. The deficiency of dissolved oxygen in a stream indicates the presence of polluting substances which cause a reduction of oxygen in the stream. The degree of deficiency is a measure of the deoxygenating effect of a particular waste, and hence it is an index of the degree of pollution present in the stream. Where a stream receives waste at a single point and the stream water and waste are well mixed, the dissolved oxygen content tends to follow a typical sag curve on the basis of time, temperature, oxygen demand, and rate of reaeration of the stream which depends in part upon its turbulence.

In North Carolina studies indicate that a dissolved oxygen minimum of 5.0 ppm is necessary to support trout and 4.0 ppm for other types of game fish. Fish life may survive at dissolved oxygen levels of 2.0 to 3.0 ppm, but it is considered that at least 4.0 ppm is necessary to permit the proper breeding and self-maintenance of the more desirable forms of fish.

Five-Day Bio-chemical Oxygen Demand (B.O.D.) - The B.O.D. test is the most important made in sanitary analyses to determine the polluting power, or strength, of sewage or organic industrial waste. It serves as a measure of the degree of treatment needed for successful disposal of the polluting substance. The standard test involves the incubation of sealed samples of water or waste for five days at a temperature of 20°C and the measurement of the loss of dissolved oxygen during the period of incubation. The loss represents the 5-day 20°C B.O.D. of the sample. The B.O.D., therefore, is a measure of the amount of dissolved oxygen that may be expected to be absorbed from a stream in five days at 20°C in order to satisfy the biological and chemical oxidation of the organic pollutants carried in the stream at the time of sampling. There is usually a definite relationship between the dissolved oxygen content and the B.O.D. Generally, in a stream below a source of pollution, it is noted that the D.O. is reduced as the B.O.D. is increased. As natural purification takes place, the D.O. will decrease to the point of the oxygen sag from whence it will begin to increase. The B.O.D. will continue to decrease. The change continues, other factors being the same, until the D.O. and the B.O.D. become normal, indicating that the stream has recovered from the effects of the initial pollution.

The Most Probable Number (MPN) of Coliform Bacteria - The coliform bacteria content is used as a general index of the sanitary condition of a stream. This determination shows the approximate density of a group of bacteria which are always present in large numbers in sewage and are relatively few in numbers in other stream pollutants. Coliform bacteria are normal inhabitants of the

intestines of all warm blooded mammals and are discharged in very large numbers in human feces, which constitute the principal source of these bacteria in sewage.

The most important use of the coliform bacteria content is evaluating the safety of water as a source of public water supply, as a suitable bathing area, and for shellfish culture.

The recommended standards for surface waters to serve as a source of public water supply with various types of treatment are specified by the United States Public Health Service. These standards designate the following limiting monthly arithmetical average MPN of coliform bacteria per 100 ml.: (1) For waters requiring only simple chlorination, or its equivalent - not more than 50 MPN; (2) For waters requiring complete rapid sand filtration, or its equivalent with continuous post-chlorination - average not over 5,000 MPN in one month and exceeding this number in not more than 20% of samples examined in any one month; (3) Waters requiring the above complete treatment with additional auxiliary treatment - exceeding 5,000 MPN in more than 20% of samples examined during any one month and not exceeding 20,000 MPN in more than 5% of samples examined during any one month; and (4), over 20,000 MPN in more than 5% of the samples - water unsuitable for use as a source of water unless it can be brought into conformance with acceptable limits by means of long-period storage or some other measure of equal permanence and reliability.

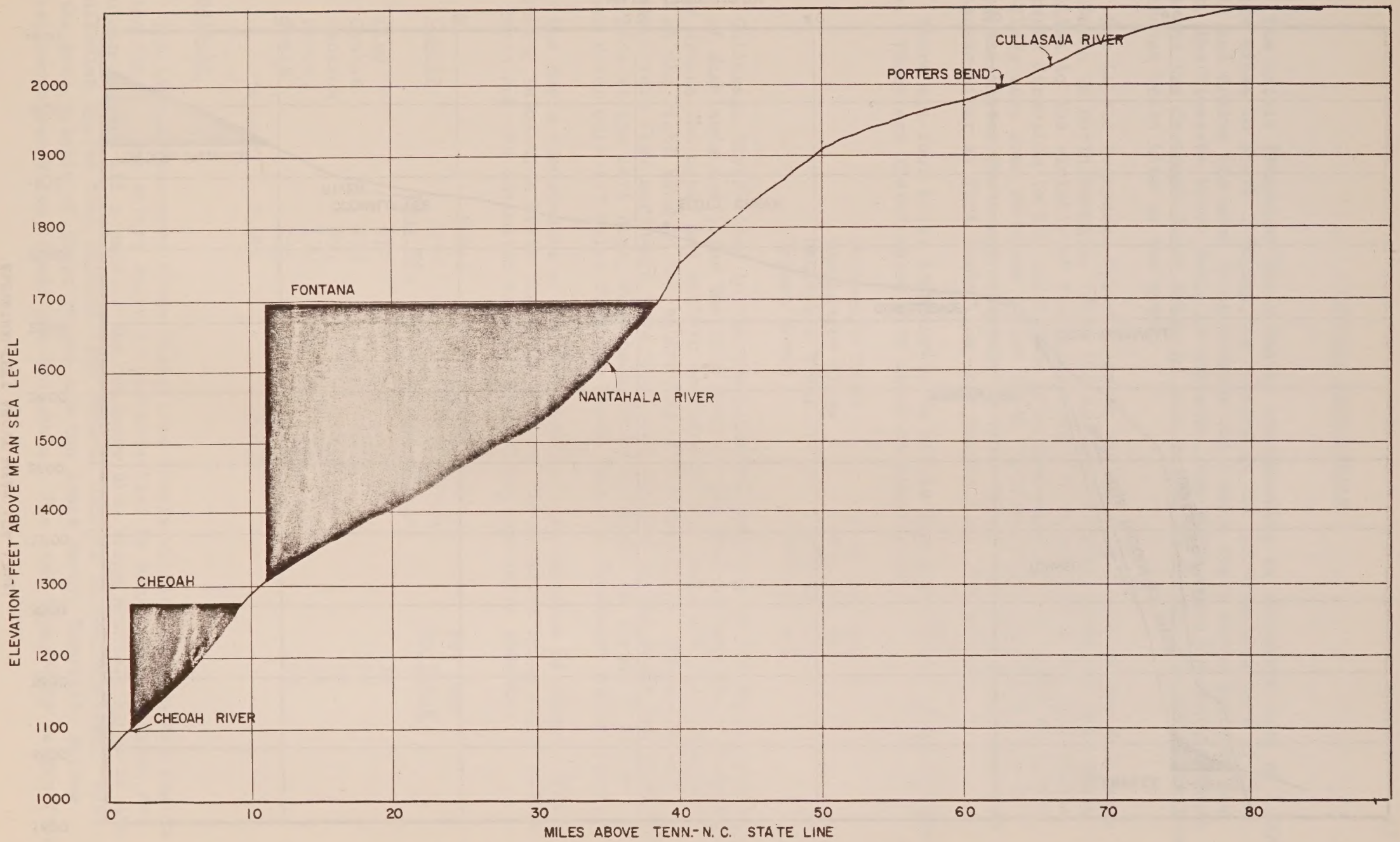
There are no generally recognized standards for the classification of bathing waters with respect to their coliform bacteria content. Coliform bacteria standards have been proposed that vary from an MPN value per 100 ml. of not over 50 to not over 3,000. In considering the suitability of water for public bathing, a sanitary survey of the drainage area and the supervision given by controlling health authorities should be considered, as well as the bacteriological content of the water.

Throughout this report, especially in the tables, certain abbreviations have been used. These are listed below:

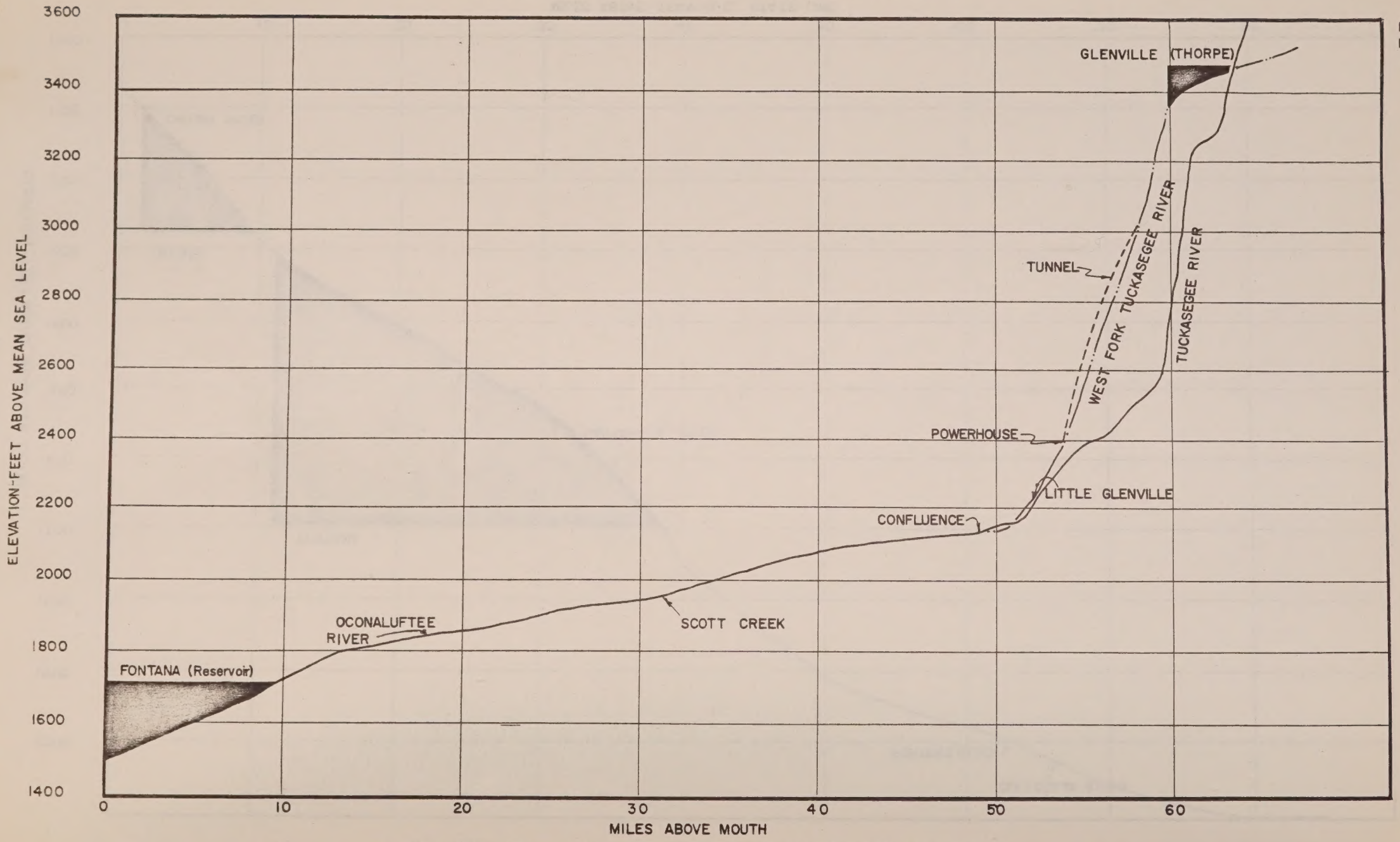
B.O.D.	-	Bio-chemical Oxygen Demand
cfs	-	Cubic Feet Per Second
D.O.	-	Dissolved Oxygen
D.S.	-	Domestic Sewage
I.W.	-	Industrial Waste
M	-	Municipal
M.G.D.	-	Million Gallons Per Day
M.P.N.	-	Most Probable Number
P	-	Private
ppm	-	Parts Per Million
P.E.	-	Domestic Sewage Population Equivalent
G.P.D.	-	Gallons Per Day
g.p.c.d.	-	Gallons Per Capita Per Day


LITTLE TENNESSEE RIVER BASIN

PROFILE OF THE LITTLE TENNESSEE RIVER



PROFILE OF THE TUCKASEGEE RIVER



GENERAL DESCRIPTION

The Little Tennessee River Basin, encompassing an estimated area of 1,804 square miles in North Carolina, is located in the southwestern part of the State and drains the area lying between the French Board River Basin on the east, the Hiwassee River Basin on the west, the North Carolina-Georgia State Line and the Savannah River Drainage Area on the south, and the North Carolina-Tennessee State Line on the north.

The Little Tennessee River rises on the eastern slopes of the Nantahala Mountains in North Georgia. From its source, it flows northerly into North Carolina to the vicinity of Franklin, whence it turns and flows in a northwesterly direction to its confluence with Tuckasegee River, where it turns and flows west some 26 miles to the North Carolina-Tennessee State Line to enter the latter State approximately 50 river miles from its confluence with Tennessee River at Fort Loudon Dam near Lenoir City, Tennessee.

There are four major tributaries to Little Tennessee River in North Carolina. These are listed below with their drainage areas:

Cullasaja River	93 sq. mi.
Tuckasegee River	738 sq. mi.
Nantahala River	176 sq. mi.
Cheoah River	215 sq. mi.

Cullasaja River rises in the south-central section of the Basin near the Town of Highlands and joins the main stem at the Town of Franklin. Tuckasegee River drains the upper and eastern sections of the Basin and joins the main stem at the right bank in the backwaters of Fontana Lake. Nantahala and Cheoah Rivers flow northward from the lower section of the Basin and join the main stem at the left bank, Nantahala River southwest of Bryson City and Cheoah River only 1.7 miles from the North Carolina-Tennessee State Line.

The Basin encompasses all of two counties and portions of three. The following tabulation lists the total area of the counties lying fully within the Basin and the estimated area of those lying partially therein:

County	Total Area Sq. Mi.	Est. Area Within Basin Sq. Mi.	Per Cent In Basin
Clay	219	30	14
Graham	299	299	100
Jackson	499	439	88
Macon	520	492	94
Swain	544	544	100
Total	2,081	1,804	

Topography

The Little Tennessee River Basin lies wholly within the mountain region of the State. The entire Basin is characterized by many peaks, ridges, and mountain ranges, all a part of the Southern Blue Ridge Mountain Range of the Appalachian System that extends from central Georgia to Newfoundland. Some of the most notable of these ranges are the Great Smoky, Snowbird, Balsam Ridge, Tennessee Ridge, Cowee and Nantahala. The land topography ranges from

a high point of 6,642 feet at Clingmans Dome on the North Carolina-Tennessee State Line to the lower valleys where a large part of the population is located.

A study of the river profiles on the preceding pages will give a picture of the steep slope of Little Tennessee and Tuckasegee Rivers. The fall of West Fork Tuckasegee River is probably the steepest, falling approximately 1,400 feet from the back waters of Glenville Lake (Thorpe Lake) to its confluence with the main stem, a distance of approximately 15 miles. Here the river flattens out until it reaches Fontana Reservoir. The fall of Little Tennessee River is more constant than Tuckasegee River, although still steep. The fall in the river from the North Carolina-Georgia State Line to Fontana Reservoir is approximately 500 feet in a distance of 75 miles.

Cover and Climate

The Little Tennessee River Basin is largely a rural area, containing only three municipalities with a population of over 1,000. These are listed below with their 1950 populations:

Bryson City	1,499
Franklin	1,975
Sylva	1,382

The estimated population for the entire Basin is only 55,000. This figure is based on the 1950 Census and does not take into consideration the large influx of tourists and those people maintaining only summer homes. A good example of this fluxuating population is the Town of Cherokee, with a 1950 permanent population of 500 which increases to an estimated 3,000 during the summer tourist season. This estimate does not include the large number of visitors for which there are no overnight accommodations but who visit the Town and the Cherokee Indian Reservation for the purpose of enjoying their various attractions. Such unstable populations put a heavy burden on the small and, in some cases, already overtaxed public utilities. The density of population is also quite irregular, ranging from seven persons per square mile in Graham County to 39 in Jackson, with an overall average of 30 persons per square mile in the Basin.

The terrain is very mountainous. One will find in the Smoky Mountain Range, the Snowbird Range and the Nantahala Gorge some of the most rugged and picturesque mountains in the State. In spite of the predominately mountainous terrain, approximately two percent of the total land area, or over 23,000 acres, is covered by water. A large percentage of this is the land covered by the lakes listed below:

Aquone Lake	Lake Cheoah
Fontana Lake	Lake Emory
Glenville Lake	Santeetlah Lake

The year-round average temperature for the entire Basin is generally cool in comparison with other sections of the State. For example, at the same time the Little Tennessee River Basin study was being made, a similar study was also being made in the Tar-Pamlico River Basin which is located in the Piedmont and Coastal Plains sections of the State. The average temperature for 1958, the year the studies were made, was 53.6°F for the Little Tennessee River Basin, while the Tar-Pamlico River Basin recorded an average of 66°F. The average for the Little Tennessee River Basin was somewhat lower than the long time average of 55.8°F. The average temperature encountered during the

summer sampling period was 66.7°F. The range during the year was rather extreme, with a high of 93°F at Franklin on June 18, and a low of - 14°F at Cullowhee on February 18.

There were no major interruptions of the sampling program during the study due to heavy flow. Although there were several heavy rainfalls encountered during the study, the runoffs were quick and the streams soon returned to their normal stage. Rainfall in the high mountain areas is very spotty and generally heavier than in the lowlands. As a comparison, the long-range average yearly rainfall for the Little Tennessee River Basin is 57.48", while it is only 47.40" for the Tar River Basin. This yearly rainfall varied greatly throughout the Basin. A station on Coweeta Mountain in the southern part of the Basin reported 77.91" of rain during 1958, while the station at Santeetlah Dam in the western section of the Basin reported only 34.25". The monthly average for the Basin during the summer sampling period was only 4.02", indicating the heaviest rains during the winter and spring months.

Although some snow was recorded at many of the mountain stations during the early and late parts of the year, there were no unusually large accumulations. Snow and ice formations on the mountains apparently had no ill effect on the streams and served only to increase the flow in the spring when melting began.

Stream Flow

Throughout the Little Tennessee River Basin, there were 43 various types of gaging stations established to obtain flows in connection with the Stream Sampling Program. Of these, there are 12 permanent and active stations maintained and operated by the United States Geological Survey. These permanent stations are located as follows:

(1) Little Tennessee River near Prentiss, N. C.
(2) Cullasaja River at Highlands, N. C.
(3) Cullasaja River at Cullasaja, N. C.
(4) Little Tennessee River at Needmore, N. C.
(5) Nantahala River near Rainbow Springs, N. C.
(6) Nantahala River at Nantahala, N. C.
(7) Tuckasegee River at Tuckasegee, N. C.
(8) Scott Creek above Sylva, N. C.
(9) Tuckasegee River at Dillsboro, N. C.
(10) Oconaluftee River at Birdtown, N. C.
(11) Tuckasegee River at Bryson City, N. C.
(12) Noland Creek near Bryson City, N. C.

Flow data for each of these stations are available through the District Office of the United States Geological Survey, Raleigh, N. C. Maximum, average, and minimum flows, the exact location, and the years for which records are available at each of the stations mentioned above, as taken from Geological Survey Water Supply Paper Number 1556, are described below:

Little Tennessee River near Prentiss, N. C.

Water-stage recorder. Datum of gage is 2,008.39 ft. above mean sea level. Located at lat. 35° 08' 57", long. 83° 22' 46", on left bank 600 ft. upstream from Owenby Branch, 0.5 mile upstream from Cartoogechaye Creek, 2 miles north of Prentiss, Macon County and at mile 119.5. Drainage Area 140 sq. mi. Records available October 1943 - September 1958. Minimum discharge 65 cfs, October 16,

17, 1954; average for 15-year period 371 cfs. Maximum discharge 5,900 cfs, June 16, 1949. Records excellent except those for periods of backwater effect, which are good.

Cullasaja River at Highlands

Water-stage recorder. Datum of gage is 3,373.63 ft. above mean sea level. Located at lat. 35° 04' 14", long. 83° 13' 57", on right bank 0.6 miles downstream from Highlands' Municipal Dam, 1.0 mile downstream from Big Creek, and 2.3 miles northwest of Highlands, Macon County. Drainage Area 14.9 sq. mi. Records available December 1927 - September 1958. Prior to October 1949, published as Cullasaja Creek at Highlands. Except for figures of momentary maximum discharge, records prior to August 29, 1931, have been found to be unreliable and should not be used. Minimum 0.2 cfs October 13, 14, 1947; average for 27-year period 58.7 cfs. Maximum discharge 5,100 cfs, August 30, 1940. Records excellent except for periods of ice effect, which are good. Some diurnal fluctuation caused by power plant at Highlands' Municipal Dam.

Cullasaja River at Cullasaja, N. C.

Water-stage recorder. Datum of gage is 2,023.37 ft. above mean sea level. Located at lat. 35° 09' 59", long. 83° 19' 25", on right bank at Cullasaja, Macon County, 1.4 miles downstream from Ellijay Creek and 4.1 miles upstream from mouth. Drainage Area 86.5 sq. mi. Records available June 1907 - December 1909; October 1920 - September 1958. Monthly discharges only for some periods. Prior to October 1949, published as Cullasaja Creek at Cullasaja. Minimum discharge 19 cfs September 18 - 22, 1925; January 2, 1940; average discharge for 40-year period 222 cfs. Maximum discharge 16,500 cfs August 30, 1940. Records excellent, except those for periods of ice effect, or no gage-height, which are good. Slight regulation at low flow by Sequoyah Lake and Mill on Buck Creek.

Little Tennessee River at Needmore, N. C.

Water-stage recorder. Datum of gage is 1,761.19 ft. above mean sea level. Located at lat. 35° 20' 11", long. 83° 31' 39", on left bank 0.8 mile downstream from DeHart Creek, 0.8 mile north of Needmore, Swain County, 2.4 miles downstream from Brush Creek, and 6.3 miles downstream from Tellico Creek at mile 92.9. Drainage Area 436 sq. mi. Records available October 1943 - September 1958. Minimum discharge 52 cfs November 7, 8, 1954; average for a 15-year period 1,021 cfs. Maximum discharge 20,200 cfs June 16, 1949. Records excellent, except those for periods of ice effect which are good. Considerable diurnal fluctuation caused by Porters Bend Power Plant at Lake Emory.

Nantahala River near Rainbow Springs, N. C.

Water-stage recorder. Datum of gage is 3,072.97 ft. above mean sea level. Located at lat. 35° 07' 35", long. 83° 37' 11", on right bank on Nantahala Forest Service road 300 ft. upstream from Roaring Fork, 0.2 mile downstream from Buck Creek, and 5 miles downstream from Town of Rainbow Springs, Macon County, and at mile 34.3. Drainage Area 51.9 sq. mi. Records available October 1940 - September 1958. Minimum discharge 33 cfs November 18, 19, 1953; average for 18-year period 196 cfs. Maximum discharge 6,300 cfs June 16, 1949. Records excellent, except those for periods of ice effect, which are good. Occasional regulation caused by fish trap.

Nantahala River at Nantahala, N. C.

Water-stage recorder. Datum of gage is 1,894.68 ft. above mean sea level. Located at lat. 35° 17' 55", long. 83° 39' 22", on left bank on U. S. Highway 19, 1.0 mile northeast of Nantahala, Swain County, 2.3 miles downstream from Rowlin Creek, 2.6 miles downstream from Nantahala Dam Power House, and at mile 10.8. Drainage Area 144 sq. mi. Records available May 1942 - September 1958. Minimum discharge 16 cfs November 9, 1953; average for 16-year period 486 cfs (adjusted for storage). Maximum discharge 7,510 cfs February 10, 1946. Records excellent for periods of ice effect or no gage height record which are good. Flow regulated by Nantahala Lake and Queens Creek Lake.

Tuckasegee River at Tuckasegee, N. C.

Water-stage recorder. Datum of gage is 2,125.16 ft. above mean sea level. Located at lat. 35° 16' 55", long. 83° 07' 37", on right bank 0.9 mile north of Tuckasegee, Jackson County, 1.0 mile downstream from West Fork Tuckasegee River, and at mile 48.5. Drainage Area 143 sq. mi. Records available June 1934 - September 1958. Minimum discharge 5.2 cfs September 3, 1956; average for 24-year period 389 cfs (adjusted for storage). Maximum discharge 40,800 cfs August 30, 1940. Records excellent except for periods of ice effect, which are good. Flow regulated by Thorpe Lake, Cedar Cliff Lake, Bear Creek Lake, and Tennessee Creek project lakes.

Scott Creek above Sylva, N. C.

Water-stage recorder. Datum of gage is 2,056.42 ft. above mean sea level. Located at lat. 35° 23' 02", long. 83° 12' 51", on right bank 800 ft. downstream from Allens Branch, 3,500 ft. upstream from Cope Creek, and 0.8 mile upstream from Sylva, Jackson County. Drainage Area 50.7 sq. mi. Records available June 1941 - September 1958. Minimum discharge 8.0 cfs September 22, 23, 1941; average for 17-year period 105 cfs. Maximum discharge 2,320 cfs January 31, 1957. Records excellent, except those for periods of ice effect, which are good.

Tuckasegee River at Dillsboro, N. C.

Water-stage recorder. Datum of gage is 1,950.15 ft. above mean sea level. Located at lat. 35° 21' 59", long. 83° 15' 38", on left bank 0.4 mile downstream from Scott Creek, 0.5 mile downstream from U. S. Highway 23 at Dillsboro, Jackson County, and at mile 31.1. Drainage Area 347 sq. mi. Records available June 1928 - September 1958. Monthly discharge only for some periods. Minimum discharge 35 cfs September 17, 1953; average for 30-year period 755 cfs. Maximum discharge 52,600 cfs August 30, 1940. Records excellent, except those for period of ice effect, which are good. Considerable diurnal fluctuation caused by Dillsboro Power Plant 0.7 mile above station. Flow partly regulated by Thorpe Lake, Cedar Cliff Lake, Bear Creek Lake, and Tennessee Creek project lakes.

Oconaluftee River at Birdtown, N. C.

Water-stage recorder. Datum of gage is 1,843.30 ft. above mean sea level. Located at lat. 35° 27' 42", long. 83° 21' 13", on right bank 200 ft. upstream from County Bridge, 0.5 mile south of Birdtown, Swain County, 0.6 mile upstream from Goose Creek, 2.2 miles southwest of Cherokee, and at mile 3.1. Drainage Area 184 sq. mi. Records available July 1945 - September 1946; July 1948 - September 1958. Minimum discharge 80 cfs October 19, 1954; average for 11-year period 505 cfs. Maximum discharge 15,000 cfs January 7, 1946. Records excellent, except those for periods of ice effect, which are good.

Tuckasegee River at Bryson City, N. C.

Water-stage recorder. Datum of gage is 1,716.54 ft. above mean sea level. Located at lat. 35° 25' 40", long. 83° 26' 50", on left bank 400 ft. downstream from bridge on State Highway 288 at Bryson City, Swain County, and 0.6 mile downstream from Deep Creek. Drainage Area 655 sq. mi. Records available October 1897 - September 1958. Monthly discharges only for some periods. Minimum discharge 27 cfs September 10, 1925; average for 61-year period 1,568 cfs (unadjusted). Maximum discharge 61,600 cfs August 30, 1940. Records excellent except those for periods of ice effect, which are good. Considerable diurnal fluctuation caused by power plants above station. Flow regulated by Thorpe Lake, Cedar Cliff Lake, Bear Creek Lake, Tennessee Creek project lakes, and two small reservoirs.

Noland Creek near Bryson City, N. C.

Water-stage Recorder. Altitude of gage is 2,280 ft. Located at lat. 35° 29' 06", long. 83° 30' 15", on right bank in Great Smoky Mountain National Park, 1.1 miles downstream from Mill Creek, 3.6 miles upstream from Fontana Lake, and 5 miles northwest of Bryson City, Swain County. Drainage Area 13.8 sq. mi. Records available October 1935 - September 1958. Minimum discharge 3.5 cfs October 24, 1939; average for 23-year period 44.4 cfs. Maximum discharge 1,530 cfs August 30, 1940. Records good, except those for periods of ice effect, which are fair.

ECONOMIC DEVELOPMENT

Population

The estimated population of the Little Tennessee River Basin, based on the 1950 Census, is approximately 55,000. The Basin showed an overall reduction of 3 percent since the 1940 Census; however, this varied widely from one location to another. Graham County, which was the least populated, showed an increase of 7.3 percent, while Swain County decreased by 18.5 percent. This indicates a fairly stable population within the Basin as a whole. This trend, which is not uncommon in remote mountain areas, could possibly be attributed to the fact that the types of industry which generally employ large numbers of people hesitate to move to remote areas where the labor potential would be small.

There are 26 townships which are entirely, or partially, within the drainage area. The Basin contains no urban areas. The principal towns are Franklin, Bryson City and Sylva, all with a 1950 population of less than 2,000.

Industry

Industry in the Little Tennessee River Basin is quite varied and, with one exception, small. Agriculture is the chief source of livelihood in the southwestern section of the Basin, while in the central and eastern sections lumbering is predominant. Scattered throughout the area where there is a center of population, there are such industries as textile and lumber manufacturing. The one large industry is the Mead Corporation, Sylva Division, at Sylva which employs a maximum force of 300 people in the production of unbleached paper for the manufacture of corrugated paper board at other plants. An industry that has increased with the coming of the paper industry is that of pulpwood production. The tourist industry is that which probably brings the most money to the area. The mountains, lakes, and numerous fishing streams attract tourists from all over the United States and foreign countries. Bryson City, which is considered the southern gateway to the Great Smoky Mountains National Park, receives many direct financial benefits from visitors to the park. The park will be discussed in more detail in a later section of this report.

There are a total of 73 manufacturing establishments in the Basin, employing 2,665 people, who earn an average annual wage of $1,279 per employee. The average per capita income for the entire Basin was $601.00 in 1954, indicating that those in industry received the highest income.

Electric Power

The power demands in the Basin are supplied largely by the Nantahala Power and Light Company, the Tennessee Valley Authority, and the Aluminum Company of America. A generating plant on Tuckasegee River, owned by the State of North Carolina, furnishes the need of Western Carolina College at Cullowhee, and the Town of Highlands maintains and operates their own power plant located near the headwaters of the Cullasaja River. Most of the power used for domestic purposes is supplied by the Nantahala Power and Light Company. Fontana Dam, which is owned by the Tennessee Valley Authority and has the distinction of being the highest dam east of the Rocky Mountains, also supplies power for domestic purposes. The power generated by the two plants, owned by the Aluminum Company of America, is used for their own consumption.

HYDROELECTRIC POWER PLANTS
LITTLE TENNESSEE RIVER BASIN

Name	Stream	KW Capacity	Annual Average KW Hours Generated 1949 - 1958	Average Discharge cfs*	Owner
Bear Creek	East Fork Tuckasegee R.	9,000	25,687,000	207	Nantahala Power & Light Co.
Bryson	Occonaluftee River	980	6,200,300	512	Nantahala Power & Light Co.
Cedar Cliff	East Fork Tuckasegee R.	6,375	17,889,429	218	Nantahala Power & Light Co.
Dillsboro	Tuckasegee River	100	-	-	Nantahala Power & Light Co.
Fontana	Little Tennessee River	202,500	Not Available	5,087 (1)	Tennessee Valley Authority
Franklin	Little Tennessee River	1,040	7,014,900	749	Nantahala Power & Light Co.
Highlands Municipal Plant	Cullasaja River	250	1,000,000	-	Town of Highlands
Nantahala	Nantahala River	43,200	238,412,900	380	Nantahala Power & Light Co.
Queens Creek	Queens Creek	1,440	4,779,891	9	Nantahala Power & Light Co.
Santeetlah	Cheoah River	40,000	215,000,000	536	Aluminum Company of America
Tapoca, Inc.	Little Tennessee River	110,000	515,000,000	3,815	Aluminum Company of America
Thorpe (2)	West Fork Tuckasegee R.	21,600	85,077,800	117	Nantahala Power & Light Co.
Tuckasegee	West Fork Tuckasegee R.	3,000	10,218,300	155	Nantahala Power & Light Co.
Western Carolina College	Tuckasegee River	225	-	-	State
Wolf Creek Tennessee Creek (3)	East Fork Tuckasegee R.	10,800	35,444,500	125	Nantahala Power & Light Co.

* Based on natural flows gaged at dams or power houses for periods of 10 years, or more, or ratio of drainage areas and long term average flows at adjacent U. S. Geological Survey and Company Stations.

(1) Average for period of stream study summer of 1958.
(2) Also called Glenville Lake.
(3) Two reservoirs joined by common tunnel to Tennessee Creek Generating Station.

The high and fast moving streams, along with the constant supply of water, make the streams well adapted to the development of hydroelectric power. In most cases, the power house is located at the foot of the dam, but the Thorpe, Nantahala, Queens Creek, Highlands, and Santeetlah power plants are located at the end of penstocks some distance from the impoundments. The table on page 30 lists the hydroelectric plants in the Basin with pertinent information about each plant. There are no steam generating plants in the Basin.

Forest Resources

The Little Tennessee River Basin contains a forest coverage of approximately 77 percent of the total land area. Of this, the Federal and State Governments own approximately 35 percent. Most notable of these holdings are: 53,000 acres of forest in the Qualla Indian Reservation of the Cherokee Indians in Swain and Jackson Counties, 3,800 acres contained in the Joyce Kilmer Memorial Forest in Graham County, and approximately 220,000 acres of rugged forest lands in the Great Smoky Mountains National Park in Swain County.

All public forest land is not available for commercial use. Cutting operations are prohibited within the boundaries of parks, memorial forests, recreational areas and public water supply watersheds. There are also many acres of rock outcrops, cliffs, and mountain balds which are classified as noncommercial because of access and location. There are, however, many acres of commercially good virgin timber that provides a major industry for the area. This is indicated by the numerous sawmills and wood turning plants located in every section of the basin.

The following is a tabulation of some of the forest land uses and ownership as listed in "Forest Survey Release No. 46, January 1956". The figures listed are totals for each County:

County	Total Forest Land Acres	Public Owned Forest Land - Acres	Saw Timber Million Board Ft.	Pulpwood Production 1955 Std. Cords
Clay	220,000	87,500	456.3	-
Graham	168,000	103,600	477.7	1,623
Jackson	275,100	44,400	512.9	31,791
Macon	271,400	140,700	543.2	18,715
Swain	318,200	44,800	177.7	10,089
Total	1,252,700	421,000	2,167.8	62,218

Agriculture

The chief crop raised in the Basin is corn, most of which is used locally for stock feed. Other crops are grown commercially such as truck crops which include potatoes, cabbage, beans, and others which are grown in smaller quantities. All tobacco is located in the Burley Belt. Although only small quantities are grown, it is a type that is in great demand and brings a good price. In 1956, only 600 acres were harvested, bringing a total of $664,000. Other commercially grown products are boxwoods and ornamental shrubs of which Swain County is the largest producer in the State.

Livestock production showed gains when compared with production in 1950. Few hogs were raised, most of which were for local consumption, while both

beef and dairy cattle raising increased slightly. The poultry industry in 1954 showed a sharp increase over the previous reporting year, 1950. While the number of farms reporting decreased, the number of chickens sold increased. In 1954, 962 farms sold 403,029 chickens as compared with 200,656 chickens sold by 2,764 farms in 1950.

The following is a tabulation by counties of money received from different farm commodities:

County	Value of Chickens Sold - 1954	Value Of 11 Principal Crops 1954	Value of Livestock - 1954
Clay	$144,254	$ 625,680	$ 185,014
Graham	12,900	734,460	108,550
Jackson	40,785	821,260	403,630
Macon	99,667	1,083,270	502,502
Swain	8,892	486,150	83,872
Total	$306,498	$3,750,820	$1,283,568

Mineral Resources

The mineral resources of the Little Tennessee River Basin can be placed in three different classes: (1) metallic; (2) non-metallic and abrasive; and (3) gems and precious stones. Many types of each class are mined at different places in the area and, while a few are mined commercially, the majority are found only in large enough quantities to entice the amateur.

Metallic Minerals - Only one of the metallic minerals found in the Basin has ever been mined commercially. This is copper, which was mined in Jackson and Swain Counties until the mines were closed in 1944. Some copper has also been found in Macon County. Other types of these minerals found in the Basin in smaller quantities are chromium, which is found as chromite in Jackson and Macon Counties; lead and zinc, usually found together in Jackson and Swain Counties; and small quantities of nickel found only in Jackson County.

Non-metallic and Abrasive Minerals - The non-metallic mineral that is mined most extensively and commercially is mica, which in this section of the State is mined as scrap mica. Mica occurs in its natural state as moscovite. Other non-metallic minerals include crushed limestone, mined in large quantities along the Nantahala River near Hewett in Macon County; sand and stone which have been mined in small quantities in Jackson County; and olivine, feldspar, kaolin, talc and vermiculite which are found in small quantities at many different localities in the Basin.

There are only three minerals of the abrasive type found in the area in commercial quantities. Asbestos has been produced in Jackson and Macon Counties, while corundum is found in the Corundum Hill section of Macon County. Emery, which is a mixture of corundum and magnitite, is found only in minor quantities in Macon County.

Gems and Precious Stones - The Ruby Valley of Western North Carolina, which is located on Cowee Creek and its tributaries in Macon County, yields not only rubies but a large variety of other gem stones. These stones range in size from chips to several carats. The rubies of Cowee Valley are said to be comparable in color and quality to those mined in India. These rubies are

not mined commercially; however, property owners have developed an extensive business catering to tourists and "rock-hounds", who are permitted to dig for the stones in the stream or gravel beds for a fee. Others of the precious stone type are Amethyst found in Macon County, and Berl and Garnet found in Jackson and Macon Counties.

Fishing

Fishing is probably the most extensive sport found in the Basin. The many cool, clean mountain streams cascading over the rocks and flowing through quiescent pools make the waters well adapted to the life of many species of fish. The most popular ones caught include pike, catfish, trout, bass, bream and crappie, just to mention a few. Many of the streams are able to restock themselves but the North Carolina Wildlife Resources Commission annually stocks many of the streams so that the lucky sportsman will always find game. These streams are managed and maintained in cooperation with the United States Fish and Wildlife Service and the United States Forest Service. It is for the above reasons that a large portion of the streams of the Basin are recommended to be fishing streams.

Mountain Trout Fishing - Because of the importance of mountain trout fishing in this area, special attention should be given to this species regarding their habitats and requirements.

The mountain trout group includes several types, the most widely known being the rainbow trout, brown trout, and brook trout, all of which are very highly prized game fish. The rainbow trout are usually found in more abundance, while the brown trout are the most sought after by fishermen because they are more difficult to land and generally heavier in weight. Brown trout of weights up to seven pounds are not uncommon. These types of fish are abundant in this basin because the cool, clean, and fast moving waters are adapted to their propagation and growing conditions. A cool temperature is probably the most important of the conditions needed, with a high oxygen content next. The temperature for all trout producing streams should not exceed 75°F. The minimum D.O. should not be less than 5.0 ppm to assure the propagation of trout, although life can be sustained in water containing as low as 3 ppm provided the temperature is lower. Other important characteristics necessary for these waters are a CO_2 not exceeding 6 - 7 ppm, a maximum M.O. alkalinity of 150 ppm, and a low turbidity. The low turbidity requirement in this Basin is of great importance, because of the mining operations introducing silt to the streams. It is necessary for the mountain trout to find a spawning area where the water is moving fast and has a rocky bottom. The eggs are laid in the gravel on the stream bed from 2 to 4 inches below the surface and covered by gravel. The hatching period is rather long and even a small amount of silt in the water over a period of several months could cover the eggs enough to kill them. Heavy silt will also tend to choke out aquatic life upon which the trout depends for 60 percent of his food.

The North Carolina Wildlife Resources Commission has designated various streams as "Trout Waters" and they should be protected as such. These streams are noted as trout waters in Table No. 10 - Recommended Classifications.

Listed below are some of the most popular fishing lakes in the basin, along with pertinent facts about the lakes and the species found in them:

Fontana Lake, Swain and Graham Counties, is a 10,000 acre lake impounded by Fontana Dam adjacent to the Great Smoky Mountains National Park. The lake

is open all year, but the boat dock opens March 1st and closes the latter part of the year. Brook, rainbow and brown trout, small mouth and large mouth bass, and varieties of perch and sunfish are found in the lake.

Lake Santeetlah, Graham County near Robbinsville - This lake, formed by Santeetlah Dam on Cheoah River, is a beautiful 3,000 acre lake at the foot of Snowbird Mountains. Small mouth bass, bream, and crappie are found there. The lake is open all year for trout and bass, and until November 30 for all other species.

Glenville Lake, Jackson County, is located near the headwaters of West Fork Tuckasegee River, near Glenville. The lake, formed by Thorpe Dam, is owned by Nantahala Power and Light Company. Brook trout and small mouth bass are abundant in the lake.

Nantahala Lake (Aquone Lake) Macon County, which is formed by the Nantahala Dam at an elevation of 2,890 feet above sea level, is open from April 15 to August 31 for trout, and until November 30 for other species. Small mouth bass, crappie, rainbow trout, and fine pan fish are abundant in the lake. The tributaries of this lake are protected spawning grounds for several species of mountain trout.

Hunting

The entire Little Tennessee River Basin provides plenty of game for the big game hunter, as well as small game and wild fowl. The most profitable hunting is that which is done on the wildlife management areas and on publicly protected areas. There are several of these located in the Basin that conduct two types of hunts during season, the party hunt and the still hunt. These areas are maintained and managed jointly by the State Wildlife Resources Commission and the United States Forest Service. The areas are listed below:

Wayah Wildlife Management Area	-	11,000 Acres
Standing Indian Wildlife Management Area	-	28,000 Acres
Santeetlah Wildlife Management Area	-	37,000 Acres

Big game include deer, bear, and the Russian wild boar, which is protected by State law, as well as deer and bear. Small game, such as rabbit, squirrel, raccoon and opossum, are found in large numbers. The wild fowl include wild turkey, grouse and Chinese pheasant. Muskrats and beaver are trapped commercially at many places within the basin.

Parks and Recreation

One of the factors that contributes most to the present and future economic development of the Little Tennessee River Basin is its tourist trade. The tourist attractions are many and varied, ranging from the huge Great Smoky Mountains National Park to small rough camp areas located along a foot trail. The camp grounds, foot trails, and bridle paths located within the Great Smoky Mountains National Park and Nantahala National Forest are maintained and supervised by the National Parks Service and the respective State and Federal Forest Services. Many of the small camps along the hiking trails include facilities for rough camping only, while the larger camps, which provide facilities for tent and trailer camping, have central drinking water supplies and sewage disposal systems. The sewage disposal systems consist of pit privies and septic tanks with nitrification lines.

There are many lakes which have been formed by the reservoirs of hydroelectric power plants that provide excellent facilities for fishing, boating and other forms of water recreation. The largest of these lakes are described on pages 33 and 34 under the general heading "Fishing".

The Cherokee Indian Reservation is the center of many attractions for the tourist during the summer and fall. Beginning in June and running through Labor Day, the main attractions are the "Oconaluftee Indian Village" and the symphonic drama "Unto These Hills" which is given in the open air Mountainside Theater, six days a week, and depicts the history of the Cherokee Indians. In October of each year, the Cherokee Indian Fair attracts thousands for a week of unusual and enlightening entertainment and recreation.

As mentioned previously, there are many camp sites and recreational areas located all over the Basin. It is not practicable to describe all of these areas in detail nor show them on Map No. 2, the map showing the recreational areas. Improved recreational areas such as White Pines, Snowbird, Cable Gap, Gorge Dell, Wesser, Burnington Gap, White Oak, and Deep Gap camp grounds, but which are more in the nature at picnicking areas, are shown on Map No. 2 simply for purposes of information, while special emphasis is given to the recreational areas which provide facilities for public camping or otherwise attract large numbers of people. These latter recreational areas, which are also shown on Map No. 2, are described below by counties, together with the recreational area on Deep Creek once proposed by the Town of Bryson City:

Graham County

Fontana Village, the former construction village at Fontana Dam, is leased from Tennessee Valley Authority by Government Services, Inc., a private organization, and is operated as a resort village. The Village contains over two hundred cottages, capable of housing approximately 1,500 persons. A separate sewage collection system serves the entire Village from which the domestic waste is treated by means of an Imhoff tank which discharges to Lake Cheoah below the dam, while the nearby observation tower and power plant are served by septic tanks with nitrification lines. The water supply is obtained from Fontana Lake and receives conventional treatment prior to use. Since swimming and water skiing are prohibited in Fontana Lake, an artificial pool, using water from the village system, is provided for those desiring to swim. The Village has a recreation director who supervises such activities as horseback riding, hiking, boating, and picnicking which provide excellent recreation for tourists.

Macon County

Wayah Crest Camp Ground is located within the boundary of the Wayah Wildlife Management Area. Space is provided for tent camping and picnicking. A bathing area, which is located within the camp grounds is supplied by water from Wayah Creek. Drinking and domestic water is supplied from springs, while sewage disposal facilities consist of septic tanks with nitrification fields and pit privies.

Bacteriological examination of samples collected from Wayah Creek showed that the water contained coliform bacteria in numbers as high as 930 (MPN) per 100 ml. with an average of 590. The results of the bacteriological examination indicated that the coliform bacteria content of these waters was within limits normally considered safe for outdoor bathing waters.

Mirrow Lake is an impoundment on Mill Creek and Cullasaja River located in the Town of Highlands. There are no facilities available for public bathing; however, the shore is lined with both permanent and summer homes. Many of these homes have their own private bathing areas which are used quite often during the summer. A sanitary survey of the drainage area shows that the lake is located only one mile below the effluent from the Town of Highlands' overloaded sewage treatment plant. Samples taken at Sampling Station No. 8 at the headwaters of the lake contained coliform bacteria in numbers as high as 460,000 (MPN) per 100 ml. with an average of 140,000, while samples taken above the dam contained such bacteria in numbers as high as 110,000 (MPN) per 100 ml. with an average of 20,000. This clearly indicates that these waters are not safe for public bathing and should not be used as such.

Cliffside Lake is a public recreation area located on Skitty Creek, a tributary to Cullasaja River near the Town of Highlands. The lake, which is used for bathing, is the center of the recreation area. The facilities include a concession stand, a bathhouse, and picnic tables. Domestic water is obtained from protected springs located some distance from the park area. Sewage is disposed of by means of a septic tank with nitrification lines at the bathhouse and pit privies at other locations in the park area. Of the 12 bacteriological samples taken in the swimming area, only one contained coliform bacteria in numbers exceeding the limits normally considered safe for outdoor bathing waters. It is believed that this one unsatisfactory sample was caused by upland drainage rather than from man made pollution and in view of the sanitary survey made of the area, the water in the lake can be considered safe for public bathing.

Van Hook Glade Camp Ground is a public camp and picnic area located in Nantahala National Forest near the Town of Highlands. The facilities at the camp ground consist of picnic tables, tent area, and pit privies for the disposal of domestic sewage. Drinking water is obtained from protected springs. It is understood that there is some occasional wading in Cullasaja River across U. S. Highway #64, adjacent to the camp ground. In this connection, it should be noted that Mill Creek and the river above the camp grounds presently show the adverse affect of the inadequately treated sewage from the Town of Highlands.

Assembly of God Camp Ground is located just off U. S. Highway #64 between Franklin and Highlands. There is one building located on the grounds. Domestic water is obtained from a deep well, while sewage is disposed of by means of a septic tank and nitrification lines. There are no facilities for bathing.

Swain County

Big Cove Ranch Camp, which is located within the boundary of the Cherokee Indian Reservation, is a privately-owned summer camp for some 50 boys and girls. Drinking water is obtained from a protected spring, while the domestic sewage is disposed of by means of septic tanks and nitrification fields. Bathing is permitted in Raven Fork. Bacteriological examination of samples of water collected from the creek at the bathing area showed that the coliform bacteria content was well within the limits normally accepted as being safe for outdoor bathing waters.

Proposed Deep Creek Recreation Area - During the time of the stream study in 1958, a representative of the Swain County Health Department, requested that this stream study group collect samples on Deep Creek near its

mouth at Bryson City because of a proposal to construct a recreation area at this site. Between June 10, 1958, and August 25, of the same year, six samples were collected which contained coliform bacteria in numbers ranging from 430 to 4,600 (MPN) per 100 ml. with an average of 1,600. The coliform bacteria density was above 2,000 (MPN) per 100 ml. in two of the six samples. It is believed that, after consideration of these analyses and a sanitary survey of the area which indicated the possibility of contamination from residential areas near Bryson City, extreme caution should be used before considering these waters safe for public bathing. A recent conference with Swain County health officials indicated that plans for the recreation area had been abandoned.

Probably the most important factor in the economic as well as recreational life of this entire Basin is the Great Smoky Mountains National Park. This is not only true of the present, but the future as well. It is because of this, that special attention is given to this area.

The Great Smoky Mountains National Park

The Great Smoky Mountains National Park, encompassing approximately 800 square miles of which approximately 340 are within North Carolina in the Little Tennessee River Basin, is on the crest of the high divide which forms the boundary between Tennessee and North Carolina. This mountain range, representing one of the oldest uplands on earth, zigzags through the park from Northeast to Southwest for 71 miles, or 54 miles by airline. For 36 miles along its main crest the range maintains an altitude in excess of 5,000 feet; 16 of its peaks rise to more than 6,000 feet. The deep blue haze rising from the valleys to the summits of the lofty peaks gives these mountains the name "Great Smoky".

The Great Smoky Mountains National Park, authorized by Congress in 1926, was established in 1930 on lands donated by the States of North Carolina and Tennessee. State funds were matched by John D. Rockefeller, Jr. through the Laura Spelman Rockefeller Memorial, in honor of his mother. The Park was dedicated on September 2, 1940, to conserving the scenic, scientific, and historic heritage of the United States for the benefit and enjoyment of its people.

The Park contains much for the entertainment of the visitors. The most rewarding experiences in the Park are found along the trails. More than 650 miles of horse and foot trails wind along the crystal-clear streams and waterfalls, past forest giants that were living before the white man came to the area, through the wild beauty of spring flowers or autumn colors, and into high mountain meadows. Guided nature tours by Park Specialists are available for the naturalist. The famed Applachain Trail which stretches from Maine to Georgia, enters the park at Davenport Gap near its eastern boundary and at Deals Gap near its western boundary. For some 30 miles along its southern boundary, the Park is edged by Fontana Lake, formed by the highest dam in the TVA System. Fontana Village is one of the larger resorts in North Carolina's Great Smoky Mountains Vacation Land. Bryson City, Sylva, and Cherokee, and other mountain resorts are also near the Park.

There are about 600 miles of streams within the Park, approximately one half of which are in North Carolina. Many miles of the streams are well-suited to trout fishing. In North Carolina, Hazel Creek, Forney Creek, and Noland Creek are the most famous of trout streams. Each year thousands of

hatchery-reared eastern brook trout are released in the more heavily fished streams. Many of the park streams also contain small mouth black bass, another highly prized game fish.

Since the establishment of the park, black bear, white tailed deer, red and grey foxes, raccoon, bobcat, wild turkey, ruffled grouse, and others have found sanctuary in these mountains. There are more than 52 species of fur-bearing animals and some 200 of birds, 26 of reptiles, 37 of amphibians, and 80 of fishes known to live there.

Three developed camp grounds just inside the eastern boundary of the Park are conveniently located for those enjoying the Park and other attractions in the Little Tennessee River Basin and surrounding areas. The camp grounds are free and have many conveniences, but they are without electricity. These camp grounds are described below:

Smokemont Camp Ground is located adjacent to U. S. Highway #441, 6 miles north of Cherokee. It contains 171 tent sites with tables and fireplaces. Water is supplied from springs and is chlorinated. The domestic sewage from the rest rooms provided for the campers is treated by means of a septic tank with subsurface drainage. Garbage collection is furnished. According to information furnished by Park officials, this camp is extremely crowded during the summer. Bradley Fork, a tributary of Oconaluftee River, is used for both wading and bathing. While no samples were collected at this point, the sanitary survey of the area indicates that the waters of Bradley Fork are sufficiently protected for public bathing.

Balsam Mountain Camp Ground, also within the boundary of Great Smoky Mountains National Park, is located 10 miles north of Soco Gap (on U. S. Highway #19) by way of Blue Ridge Parkway. It contains 47 camp sites with tables and fireplaces. The domestic sewage is disposed of by means of septic tanks and a subsurface drainage system. Drinking water is obtained from Bunches Creek and is chlorinated. Garbage collection is provided by the Park service. No bathing facilities are available.

Deep Creek Camp Ground is also a public camp ground within the Park boundary. It is located 2 miles north of Bryson City. It contains 64 tent sites with tables and fireplaces. Water is supplied from a spring and is chlorinated. Restrooms are provided and the domestic sewage is disposed of by means of a septic tank with subsurface drainage systems. Deep Creek is used by the campers for both wading and bathing. Bacteriological examination of samples collected at the camp ground bathing area showed that the water contained coliform bacteria in numbers usually well within the limits normally considered safe for outdoor bathing waters. While the number of such bacteria approached the unsatisfactory limit on one occasion, the absence of sources of upstream pollution and the usual good quality of water prevailing indicated that this bathing area was satisfactory for the uses made of it.

Numerous wilderness campsites are scattered throughout the Park along the trails. These sites provide shelter and pit privies for the disposal of domestic sewage.

Since its dedication in 1940, the Smoky Mountains National Park has become the nations most visited playground and natural shrine. Each year the volume of visitors grows larger; the number of annual visitors to the Park more than doubled in the years 1947 through 1956. In 1947, 1,204,017 visitors entered the Park; in 1956, this number was increased to 2,885,819. These figures include entrances through Tennessee as well as through North Carolina.

The economic impact from the Park visitors is felt in a wide area surrounding the Park. Since there are no lodging or dining accomodations within the Park boundary, the surrounding area benefits greatly from the visitors. In the Little Tennessee River Basin it is estimated that $1,020,323 was spent for overnight lodging alone, so it can be seen that travel dollars spent in the Little Tennessee River Basin, provide the economic backbone for this area.

A ten-year program of increased development, protection, and maintenance of the Great Smoky Mountains National Park is designed to put the Park in shape to adequately care for the increased visitation expected by 1966, the 50th anniversary of the National Park Service. This program provides for the reconstruction of major roads, the completion of which will provide 172 miles of major roads. Construction of additional trails will bring the total in the Park to approximately 700 miles, about half of which are in North Carolina. By 1966 five camp grounds and additional picnic areas are to be built. The program is planned to provide adequate facilities and services for an estimated 4,500,000 people in 1966 in such a fashion that these visitors will be able to enjoy a worth-while experience in visiting the Great Smoky Mountains National Park. These additional facilities and additional visitors will have a great economic impact upon the surrounding area, and will probably be felt more in the Little Tennessee River Basin than elsewhere in North Carolina because of its location in close proximity to the Park.

Coweeta Hydrologic Laboratory

The Little Tennessee River Basin is unique in that it contains the Coweeta Hydrologic Laboratory which was established in 1934 by the U. S. Department of Agriculture, Forest Service. The Laboratory area containing 5,600 acres is located on Coweeta Creek in Macon County south of Franklin. The Laboratory was established for the purpose of Water Resources and Watershed Management Research. Since North Carolina contains expansive forest resources which play a great part in the overall economy of the State, it is felt that the investigation of forest influences in this area should prove profitable, and certainly bears mention in a report of this kind.

The Laboratory was established to determine how forests and forestry practices affect water yields, water quality, and stream flow behavior in the Southern Appalachians, the zone of maximum precipitation for the eastern United States (Nantahala Range of the Southern Appalachians).

The projects are carried to completion through analysis of data, preparation of reports, and publication of technical articles. Research Studies at the Laboratory include:

(1) Evapotranspiration from forest land, hydrologic effects of reducing basal area 50 percent.

(2) Rehabilitation treatment of experimental watersheds formerly used in studies of mountain farming, woodland grazing, and exploitive mountain logging.

(3) Type conversion on drained slopes.

(4) Soil moisture regime in relation to evapotranspiration.

(5) Operating forest pilot watersheds to demonstrate proper location and layout of logging roads.

These research projects serve as demonstrations of good and poor watershed management practices and necessary rehabilitation methods have been of great educational value to the public and have helped to document recommendations for proper land practices on public and private lands.

Transportation

The entire basin is served by a network of Federal and State primary roads, as well as many secondary roads which connect the rural areas with the primary roads. U. S. Highway 19 is the principal East-West highway, entering the Basin from Haywood County at Balsam Gap and crossing it to enter the Hiwassee Basin near Topton in Cherokee County. N. C. Highway 107, which connects with U. S. Highway 19 at Sylva, covers the upper portion of the Tuckasegee River drainage area. U. S. Highway 441 is the main North-South road, crossing the Basin from Newfound Gap in the Great Smoky Mountains National Park in the North to the community of Norton near the Georgia State line. Many dirt unimproved roads and trails provide remote areas access to the better highway system.

The Southern Railroad, which parallels U. S. Highway 19 through the Basin, is the principal railroad. Graham County is served by the Graham County Railroad which is a small freight-only branch line of the Southern Railroad. Tallula Falls Railroad, another freight-only railroad, runs south from the Town of Franklin to the State of Georgia.

Private airports at Bryson City and Franklin comprise the air transportation facilities in the Basin. Commercial airports at Asheville and Knoxville, Tennessee, are available to those living or working in the area.

The streams in the basin are not navigable; however, the many lakes are capable of carrying small craft, such as small fishing and pleasure boats.

GENERAL SURVEY FINDINGS

For convenience in presenting the survey findings relative to present and potential water and land usage, Little Tennessee River has been divided into four segments which are fairly well defined from the viewpoint of water usage. Significant water and land uses, and data relative to these uses, are presented in each segment. These data are also summarized in Table 2, Public and Semi-Public Surface Water Supplies; Table 3, Industrial Surface Water Supplies; Table 4, Public Ground Water Supplies; Table 5, Points of Significant Sources of Pollution; Table 6, Points of Significant Sources of Pollution - Mining Operations; Table 7, Schools; Table 8, Prison Camps; Table 9, Analytical Results; and Table 10, Recommended Classifications.

SEGMENT I. LITTLE TENNESSEE RIVER AND ITS TRIBUTARIES FROM NORTH CAROLINA-GEORGIA STATE LINE TO MOUTH OF CULLASAJA RIVER

There were no public water supplies located on this Segment of the river at the time of the stream survey in 1957; however, the Town of Franklin, which is presently supplying a maximum of 0.350 MGD from wells, has requested that a section of Cartoogechaye Creek above U. S. Highway 64 be protected for a future water supply. In this connection, it should be noted that Sampling Station No. 3 was located in the general area of the proposed water supply intake. The bacteriological examination of samples collected during the period of the stream study showed that the water contained an average coliform bacteria content of 7,000 (MPN) per 100 ml. It is believed that this rather high number of such bacteria was due to the pasturing of cattle on farms upstream from the sampling station and possibly from the growing population near U. S. Highway 64. In giving further consideration to this matter, the Town should take note of these facts.

There is only one recreation area located within this Segment of the river. This is Wayah Crest Camp Ground which is within the boundaries of Wayah Wildlife Management Area. The headwaters of Wayah Creek are used by bathers at the park.

The appearance of this Segment of Little Tennessee River is sometimes different from other segments in that it is generally shallow and muddy. The main river is used occasionally for fishing, but it is insignificant in comparison to the use made of the clearer nearby streams.

There is only one source of significant pollution located in this Segment which is described below:

Franklin Hosiery Company, Franklin, is located outside the corporate limits of the Town of Franklin. The plant employs an average of 450 people and is engaged in the manufacture of ladies full-fashion hosiery. The hosiery are only knitted at this plant and shipped in the gray to an out-of-state location for finishing. Water is supplied by the Town of Franklin, while the domestic sewage is disposed of by use of a septic tank and sand filter. The plant has an estimated influent P. E. of 150 and discharges an effluent with an estimated P.E. of 38 to Cartoogechaye Creek 1.7 miles above its mouth. This plant is apparently well-operated and maintained. This is indicated by the clean appearance of the plant and the stream below the effluent as well as by the analyses of the samples collected in the creek below the plant effluent. If this plant is continued to be well-operated and maintained, and the volume or character of the waste is unchanged, no further action will be necessary.

SEGMENT II. LITTLE TENNESSEE RIVER AND ITS TRIBUTARIES FROM MOUTH OF CULLASAJA RIVER TO UPSTREAM SIDE OF MOUTH OF HAZEL CREEK

This Segment is the longest segment in the Basin and includes most of the pollution, both industrial and domestic. Tuckasegee River is the largest tributary to Little Tennessee River in the Basin and is included in this Segment. The bulk of the population and the largest centers of population in the Basin are located either on the banks of the main stem or its tributaries as well as the one large industry, the Mead Corporation, Sylva Division. The Town of Franklin is located on the Main Stem of Little Tennessee River, while Bryson City is located on Tuckasegee River. Sylva, Dillsboro, and the Mead Corporation are on Scott Creek, which is a major tributary of Tuckasegee River, while the Town of Highlands is located on the headwaters of Cullasaja River.

There are ten surface water supplies located in this Segment, five of which are industrial. Mead Corporation, Sylva Division obtains an average of 3.7 MGD of water for process purposes from Scott Creek a short distance upstream from their first industrial waste outfall. The water receives conventional treatment for some purposes while for other purposes it is used either in the condition as received or after sedimentation. Drinking water is obtained from the Town of Sylva. The Nantahala Limestone and Talc Company obtains an undetermined amount of process water from Nantahala River, while process water used by the Associated Mica Mining Company is obtained from Little Tennessee River and that of the Macon Mining Company from Caler Fork Creek. The J. L. Collville Construction Company uses water from Scott Creek for washing gravel. The surface waters used by the towns as public water supplies are located in protected areas and in large measure receive only chlorination as treatment. The Town of Highlands obtains an average of 0.300 MGD during the peak of the tourist season from Houston Branch and Rattlesnake Branch, while Bryson City obtains an average of 0.250 MGD during the tourist season from Lands Creek and Jenkins Branch. Both of these supplies are supplemented by wells when needed. The Village of Cherokee uses an average of 0.250 MGD of water from Mingus Creek after sedimentation and chlorination during the tourist season. The Town of Sylva uses an average of 0.300 MGD of water after complete conventional treatment. The raw water is obtained from intakes in Fisher Creek and Dills Creek. Western Carolina College supplies the college and Community of Cullowhee with an average of 0.150 MGD of water obtained from Long Branch and Flat Branch after treatment consisting of two Roberts Filters and post chlorination. The college is proposing an additional intake in Wolf Creek and one in Whiterock Creek, which are tributaries to Cullowhee Creek.

This Segment of the river is also used quite extensively for recreation. There are twelve known camp grounds located within this area, most of which are part of the Nantahala National Forest and the Great Smoky Mountains National Park. Only three of these have facilities for bathing or wading. In addition there are two lakes which are used extensively for bathing. These have been described in a previous section of this report entitled, "Parks and Recreation", but are listed as follow for ready reference:

Mirror Lake - Macon County
Cliffside Lake - Macon County
Van Hook Glade Camp Ground - Macon County
Assembly of God Church Ground - Macon County
Deep Gap Camp Ground - Macon County
White Oak Camp Ground - Macon County
Burningtown Gap Camp Ground - Macon County
Wesser Camp Ground - Swain County
George Dell Camp Ground - Swain County

Smokemont Camp Ground - Swain County
Big Cove Ranch Camp - Swain County
Balsam Mountain Camp Ground - Swain County
Deep Creek Camp Ground - Swain County
Cable Gap Camp Ground - Graham County

The main stem of Little Tennessee River in this Segment and many of its tributaries, with the exception of sections of Tuckasegee River and Scott Creek, are considered by Wildlife Officials as good fishing streams. Many of these streams have been designated by the North Carolina Wildlife Resources Commission as "Mountain Trout Streams". Aquone Lake and its backwaters are in fact hatching waters for these highly-prized mountain trout. Many other streams are stocked periodically.

Irrigation is used very little in the entire Little Tennessee River Basin; however, there are a few pumps which are located on Tuckasegee River and its tributaries for the most part.

There are 13 points of significant pollution located on this Segment of Little Tennessee River and its tributaries. Four of these are mining industries which discharge waste largely inorganic in character and serve only to increase the turbidity in the receiving stream and silt on the stream bed. The wastes from the remaining nine are organic and contain a domestic sewage population equivalent (P.E.) estimated to be 535,797 before treatment and 531,770 after treatment. In other words, less than one percent of the total waste load is reduced by treatment before being discharged to the respective receiving streams. In addition to the above, the unsewered communities of Webster, Whittier, and Ela present special problems. The various sources of pollution are described below in downstream order:

The Town of Highlands, with a 1950 population of 514, has a separate-type sewerage system that serves a permanent, or year-round population of 200. During the summer months, the influx of tourists and residents of summer homes will increase this number to 500. This system is very limited in its service in that it serves only the business area and several guest homes and hotels in the downtown area. The water system, on the other hand, is much larger in that it serves a year-round population of 550 which increases to some 4,000 during the summer season. Many of these people live near or around Mirror Lake, which is included in those sections of the Town or its vicinity which are not sewered. The houses in the unsewered sections of the Town are served by individual septic tank systems and nitrification lines. In this connection, the analyses of samples of water collected from Mill Creek at U. S. Highway 64, Sampling Station No. 6 above the Town's sewage plant outfall, show that the water had an average coliform bacteria content of 17,000 (MPN) per 100 ml., and contained as many as 110,000 (MPN) per 100 ml. on occasion. These unsatisfactory conditions indicated that improperly treated sewage was reaching the stream from private sources.

The Town's sewage treatment plant consists only of a poorly operated and maintained septic tank designed for about 100 people with a 4-inch effluent outfall discharging to Mill Creek about 0.9 of a mile upstream from Mirror Lake. Obviously, it is severely overloaded and no credit could be given for any reduction in pollution. In this connection, it should be noted that the Local Health Department reports numerous complaints, generally in reference to odors from the septic tank, made by residents and the operator of a restaurant and tourist court located on Mill Creek.

The discharge of improperly treated sewage from this treatment plant causes sludge deposits in the receiving waters, lowers the dissolved oxygen assets, and increases the B.O.D. as well as the numbers of coliform bacteria found in the water. The water in Mill Creek at Sampling Station No. 7, 50 feet below the point of discharge of effluent from the treatment plant, contained as little as 3.4 ppm of dissolved oxygen and had an average B.O.D. of 15 ppm, while the average coliform bacteria content was 600,000 (MPN) per 100 ml. At Sampling Station No. 8, about 0.8 of a mile downstream from the point of waste discharge, the water contained an average of 140,000 (MPN) coliform bacteria per 100 ml. While this was some improvement, the water was still highly polluted. Samples of water taken from the bridge on the highway crossing Mirror Lake (Cullasaja River at this point) contained an average of 20,000 (MPN) coliform bacteria per 100 ml. Such large numbers of coliform bacteria clearly defines the public health hazard to the residents of the area who use this lake for bathing. Examination of the analyses of water sampled below Mirror Lake and even below Lake Sequoyah shows that during periods of high runoff, the water contains larger numbers of coliform bacteria than desirable.

The Town of Highlands should employ consulting engineers and plan promptly for measures designed to remove the public health hazard in Mill Creek and Mirror Lake. They should include in their planning the extension of the sewerage system to the unsewered sections of the Town as well as adequate sewage treatment facilities which should be well-operated and maintained at all times. Should there be a desire of the people of the area to use Mirror Lake for bathing, it will be necessary to so locate and design the sewage treatment facilities that effluent therefrom can be discharged into Cullasaja River below the lake, as even well-treated sewage discharged into Mill Creek so near waters used for bathing will continue to pose a public health hazard in this regard. The State Stream Sanitation Committee is recommending a classification for Mirror Lake which will protect these waters for fish propagation and survival but not for public bathing. Should the Town's people desire to use the lake for public bathing, it is hoped that they will give the Committee their views on this subject and explain to the Committee their plans for safeguarding such a use at the public hearing which will follow the publication of this report. In the meantime, bathing in Mirror Lake should be prohibited.

The Town of Franklin is one of the tourist centers of the Basin and as such it has a greatly fluctuating population from the winter to summer. It has been conservatively estimated that the population served by the water system is increased by 3,000 tourists in the summer, while the separate-type sewage collection system must serve an increase in population of some 2,250. Part of the sewage is discharged untreated into the Little Tennessee River via several outfalls, while the remainder is treated in an Imhoff tank prior to discharge to the river through still another outfall.

It is estimated that the outfalls receiving untreated sewage serve a population of 545 in the winter, with due regard to the school enrollment, while in the summer these sewers receive the untreated sewage from an estimated population of 1,150 including the tourists. While the untreated sewage from some 10 employees of the Mineral Products Company and some 30 employees of the Zickgraf Hardwood Company is discharged into the river via a common outfall, the employees of these companies are included in the above population figures for convenience in showing the overall loading on the river.

The Imhoff tank is estimated to serve a population of 400 in the winter and a population of 1,900 in the summer when the estimated sewage flows are

52,000 and 107,000 g.p.d., respectively. In addition, the Imhoff tank receives industrial waste from a creamery with a population equivalent (P.E.) of 3,636. The maximum organic loading on this plant in the summer, therefore, has an estimated P.E. of 5,536. While the Imhoff tank does not appear to be hydraulically overloaded, it is rapidly approaching the design flow of 125,000 g.p.d. and obviously the plant is grossly overloaded in its ability to satisfactorily reduce the organic matter. In fact, no credit for B.O.D. reduction can be given this plant because of the overloading as described and because of its poor operation and maintenance.

The discharge of these wastes into the Little Tennessee River causes sludge deposits, a reduction in the dissolved oxygen assets of the river, an increase in the B.O.D. of the river water, and at the time of the stream studies an increase in the coliform bacteria content from an average of 14,000 (MPN) per 100 ml. above the pollution to an average of 70,000 below. While there is some improvement in the river water below the dam at Lake Emory, except for a further decrease in dissolved oxygen, there was still evidence of this waste at Sampling Station No. 18, some 4.0 miles below the upper outfalls, especially during periods of high runoff.

The Town should take the necessary steps to provide adequate collection of all sewage within its borders, including the presently unsewered areas, and provide a degree of treatment necessary to protect the downstream uses made of the river and to remove the obvious public health hazard presently caused by the inadequately treated and untreated sewage. The engineers should include in their study a careful evaluation of the problem caused by the influx of tourists and design the necessary treatment plant accordingly. Special study should be made of the discharge of waste from the creamery.

The Iotla Mica Mine, operated by the Associated Mica Mining Company, is located on Little Tennessee River near the small Community of Iotla. This Company is engaged in the processing of scrap mica. When the mine is operating, it produces an average of eleven tons of finished mica per day. As a mica mining operation, it requires approximately five tons of ore to produce one ton of finished product; therefore, this company mines approximately 55 tons of ore per day on the average. The effluent from the washing operation is discharged into Little Tennessee River without any treatment. This mine was not operating during the stream study; however, visual operations of the stream made during operation indicated a heavy turbidity in the water and silt accumulations on the stream bed. The Associated Mica Mining Company should provide adequate settling facilities for use when the plant is being operated.

Macon Mining Company, located near the head of Caler Fork Creek, is also engaged in the processing of scrap mica. The ore for processing is removed by the hydraulic mining process, that is, by using high pressure hoses. The ore in the form of a slurry is floated to the washers. When this water is released to the stream after a short period of settling, it still contains a heavy load of inorganic solids and causes heavy turbidity and silt accumulations in the stream bed. Caler Fork Creek, at Sampling Station No. 20 below this mine, when operating, contained an average of 7,436 ppm suspended solids and 36.7 ml/l of settleable solids. Macon Mining Company should provide more adequate settling facilities to protect Caler Fork Creek and Cowee Creek, to which Caler Fork Creek is tributary. Cowee Creek is an important mountain trout stream and every effort should be made to protect this beneficial use.

Although Macon Mining Company is the largest mining enterprise on the watershed of Cowee Creek, it is not the only one. The "Ruby Valley of Western Carolina" is located along Cowee Creek and its tributaries. The most prolific of the several private mines are located on Caler Fork Creek in which tourists prospect for rubies and other precious stones. Each of these mines is small and their operation is normally confined to the tourist season. The discharge of waste from these small operations is intermittent and, while some solids are discharged to Caler Fork Creek, any adverse affect upon either Caler Fork Creek or Cowee Creek, below the mouth of Caler Fork Creek, is negligible. On the other hand, if these operations increase in size, it may be necessary to settle the waste prior to discharge to the receiving waters.

Nantahala Limestone and Talc Company is located on the banks of Nantahala River near the Community of Nantahala. The plant is engaged in the process of crushing and washing of limestone rock. The water for washing the stone is taken from Nantahala River and discharged after use into the river only a short distance downstream from the plant. During previous operations, the overburden at the mining site had been removed hydraulically by flushing into the river by use of high pressure nozzles. This type of operation has recently been discontinued. Nantahala River at this point is steep and swift; however, turbidity and silt can be seen along the left bank for a short distance downstream, although after thorough admixture of the washwater with the river water, the turbidity and suspended solids were relatively low. This stream is an excellent mountain trout fishing stream and should be protected for this purpose. This could be accomplished by simple settlement of the washwater.

Western Carolina College, Cullowhee, has a separate-type sewage collection system serving a total population of 1,800, including the College, faculty and part of the Community of Cullowhee. The waste consists only of domestic sewage and is treated by means of a well-operated and maintained secondary-type treatment plant which is operating under the provisions of a "Certificate of Approval" issued by the State Stream Sanitation Committee in October, 1954. The treatment plant is designed hydraulically for a flow of 0.332 MGD or for a population of about 3,300, based on a sewage flow of 100 g.p.c.d.

The treatment plant effluent is discharged into Cullowhee Creek at a point 0.1 of a mile above Tuckasegee River. The analyses of samples of water collected at Sampling Station No. 34 at the mouth of the creek, after thorough mixture with the plant effluent, confirmed the satisfactory operation of this plant. The dissolved oxygen assets showed little change as well as the B.O.D. and, while the coliform bacteria content averaged 57,000 (MPN) per 100 ml., this reduced to an average of 4,300 (MPN) per 100 ml. in Tuckasegee River at Sampling Station No. 35 below Cullowhee Creek. The dissolved oxygen assets and the B.O.D. of Tuckasegee River showed little effect from the plant effluent. If this plant continues to receive satisfactory operation and maintenance, the capacity is such as to permit a considerable growth of the College and the Community of Cullowhee before changes will be necessary.

A number of samples were collected from Cullowhee Creek at Sampling Station No. 30 located about one mile above the College sewage treatment plant. Additional samples were collected from Long Branch, Tilley Creek, and Cullowhee Creek at points above Sampling Station No. 30. Both the analyses and visual observations showed that pollution was reaching these streams from private outfalls. The observations showed that at least some of this pollution was due to untreated sewage. It should be noted, however, that in connection with Long Branch, the water was satisfactory for use as one of the

sources of water supply for the College as sampled at the intake. Long Branch below the College water intake showed the effects of incidental pollution. The water at Cullowhee Creek at Sampling Station No. 30, below the pollution from the private outfalls, contained an average coliform bacteria content of 45,000 (MPN) per 100 ml. and as many as 240,000 (MPN) per 100 ml. on one occasion. Where practicable, the untreated sewage from private outfalls should be discharged to the College sewage treatment plant. If this cannot be done, then the sewage should be adequately treated by private systems.

The Town of Webster, with a 1950 population of 142, has no unified sewage collection system. However, there is a private outfall serving six houses discharging untreated domestic sewage into Mill Creek, a tributary of Tuckasegee River. The Webster school with an enrollment of 400, discharges the effluent from a septic tank and sand filter into a ditch also tributary to Tuckasegee River. While no samples were taken in Mill Creek or on Tuckasegee River, in this vicinity, the water in the river at Sampling Station No. 36, located 3.8 miles downstream from Mill Creek, contained an average coliform bacteria content of 15,000 (MPN) per 100 ml. The average coliform bacteria content at Sampling Station No. 35, which is just downstream from Cullowhee Creek and the effluent from the Western Carolina College sewage treatment plant, was only 4,300 (MPN) per 100 ml. This indicates pollution is entering Tuckasegee River between Cullowhee Creek and Scott Creek. A study of this area shows the Town of Webster to be the only center of population on this section of the river. Should this Town experience a rapid growth, it should consider the installation of a sewage collection system and sewage treatment facilities. In the meantime, the Local Health Department should encourage the owners of the private outfall to provide treatment of this waste in order to help remove the overall pollution problem in Tuckasegee River.

Bradley Packing Company, Dillsboro, is engaged in the slaughtering, and packing of pork and beef products. The waste from these processes is discharged to a grease removal unit which is housed in the main building. This unit shows evidence of being properly maintained, that is to say it is skimmed at intervals often enough to prevent the entrance of great quantities of grease to the effluent line. From the grease removal unit the waste passes through a series of septic tanks and thence to a filter trench which discharges to Savannah Creek. The effluent is slightly colored; however, there is no accumulation of grease or other solids in the stream. This plant was not in operation during the stream studies; therefore, no samples were collected. Visual observations of the stream does not indicate that the waste has much of an adverse effect upon it and if the present type of operation and maintenance is continued, and the volume of production is not greatly increased, no further action will be necessary.

J. L. Collville Construction Company has leased land on the banks of Scott Creek, approximately three miles east of Sylva, for the purpose of processing bank-run gravel. The operation of this plant is very intermittent and on a small scale, operating only when the gravel is needed. When the plant is washing gravel, the turbidity of the water in the creek is increased and silt accumulations can be seen on the stream bed. The analyses at Sampling Station No. 39 on Scott Creek below this plant reflect the adverse conditions in this creek when the gravel is being washed. The creek water on one occasion at this station contained 1,431 ppm suspended solids and 3.0 ml/l of settleable solids. Scott Creek below this plant is a good fishing stream and is used for industrial water supply purposes at the Mead Corporation-Sylva Division. In view of these stream uses, every care should be exercised to remove as much silt and trubidity as possible from the washwater prior to its discharge to the stream. The use of settling ponds would do much to prevent adverse conditions in this section of Scott Creek.

Mead Corporation-Sylva Division, located on Scott Creek in the Town of Sylva, produces unbleached paper from hardwood by a semi-chemical process. Following the stream study in the Little Tennessee River Basin in 1958, a special study was made of the wastes from this mill. This study revealed that the mill was discharging an average of 3.7 MGD of waste and the sewage from some 300 employees to Scott Creek without treatment which resulted in an organic loading on the creek with a domestic sewage equivalent (P.E.) of 520,000. These wastes are discharged to the stream via five separate outfalls. The largest outfall, which carries 3.2 MGD of the waste, contains the wastes from the actual processing of the pulp and paper and is metered by use of a Parshall Flume. The next largest outfall, which discharges to Scott Creek at Hoopers Garage, contains boiler room waste, the wood yard waste, and domestic sewage from the bathhouse and locker rooms. The remaining three outfalls carry a small volume in comparison to the overall amount of waste but, nevertheless, discharge wastes containing a considerable amount of organic matter. One outfall contains storm drainage from the front yard and parking area along with domestic sewage from the office. Another outfall contains the overflow from the water treatment plant settling basin, while still another one contains the dregs from the blow-down tanks when it is drained. This outfall does not have a continuous flow but is in the nature of slugs from the partly settled blow-down liquor from the digesters.

Samples collected from Scott Creek during the 1958 stream studies at Sampling Station No. 42, which was located approximately 0.25 of a mile below the last Mead outfall, generally were devoid of dissolved oxygen and contained an average B.O.D. of 160 ppm with a maximum of 360 ppm. These conditions prevailed in Scott Creek until it reached Tuckasegee River. The true color of the water in Scott Creek varied from an average of 380 color units at Sampling Station No. 42 to an average of 460 such units near its mouth at Sampling Station No. 45. The water at Sampling Station No. 45A, located on Tuckasegee River 0.6 of a mile below Scott Creek, showed slight improvement in the quality of water which contained an average D.O. of 3.0 ppm, although it reached zero on occasion. This improvement can be attributed largely to the additional 329 cfs on the average of dillution water available in Tuckasegee River and to the turbulent condition of the stream in this area. The river appeared to be well on its way to recovery, under the conditions prevailing during the stream studies, by the time it reached the Barkers Creek Bridge. At this point, the D.O. had reached an average of 5.9 ppm and the average B.O.D. was reduced to 29 ppm.

Although visual observation showed the usual brown color to be still very pronounced at Barkers Creek Bridge, it was reduced in intensity to 75 color units at this point. While the river still appeared to be greatly discolored as far downstream as Bryson City, the average measured color at Sampling Station No. 58 at Bryson City was only 39 color units which, nevertheless, was sufficient to result in complaint, as the residents compared this color with that observed in the streams which do not contain industrial wastes.

Tuckasegee River below Scott Creek is not completely void of fish life, although the most desirable types are not, as a rule, found there. In August, 1959, a representative of this office investigated a fish kill in Tuckasegee River which had been reported by the Fish Division of the Wildlife Resources Commission. Great numbers of dead fish, consisting of catfish, carp, bream, and bass were found in the river from the mouth of Scott Creek to the Jackson-Swain County line. It is believed that this kill was caused by a combination of high temperatures, low flows with the normal stream conditions, and possibly by a slug of strong waste from the black liquor blow-down tank, which had been discharged into Scott Creek just prior to the fish kill. The stream flow

conditions found during the regular stream study were by no means the worst. At Sampling Station 45A, located at the U.S.G.S. recorder at Dillsboro, the average flow during the 1958 summer study was 447 cfs, while the minimum 7 day average, with recurrance interval of once in ten years, is estimated to be but 149 cfs.

Only the highly optimistic would expect Scott Creek to support fish life even under greatly improved conditions; however, it is believed that if appropriate pollution control measures are taken by Mead Corporation along with the other polluters on this stretch of Scott Creek, Tuckasegee River could continuously support fish life.

Mead Corporation is to be commended for recognizing the problem caused by the discharge of this untreated waste and for taking the preliminary steps leading to the control of this pollution. The Mead Corporation now has the color problem under study in a research project at the University of North Carolina and is cooperating in pilot plant studies and full scale treatment studies being made at other company mills. The Mead Corporation is urged to continue and hasten these studies so that full-plant designs can be made and adequate treatment facilities constructed as promptly as possible, in order that both Scott Creek and Tuckasegee River can be adequately protected for their beneficial uses.

The Town of Sylva, with a 1950 population of 1,382, has a separate type sewage collection system serving a population of 1,000. The untreated domestic sewage is discharged into Scott Creek via seven outfalls, and into Cope Creek near its mouth by means of still another outfall. There are also an unknown number of people using private outfalls located all along the above-mentioned creeks. It is difficult to separate the effects of the pollution from the Town of Sylva from those of Mead Corporation; however, the presence of large quantities of domestic sewage is indicated by an increase in coliform bacteria from an average of 42,000 (MPN) per 100 ml. at Sampling Station No. 40, which is above all pollution from Sylva, to 150,000 (MPN) per 100 ml. at Sampling Station No. 44, located below all pollution from this Town and above that from the Town of Dillsboro.

The Town of Sylva should plan to collect the sewage from all municipal outfalls into a common line so that it can be easily treated and thereby remove their part of the pollution in Scott Creek, it's tributaries, and eventually Tuckasegee River. In order to remove as much untreated waste as possible from these streams, the Town should also consider the addition of all private outfalls within its boundaries to the municipal sewerage system. In this connection, the analyses at Sampling Station No. 40 on Scott Creek indicated that pollution was reaching this creek from private outfalls located just upstream from the Town Line. The water at this point contained an average coliform bacteria content of 42,000 (MPN) per 100 ml. and numbers as high as 110,000 (MPN) per 100 ml. If it is not practicable for the Town to accept the sewage from these private outfalls, then the individual property owners should provide private sewage treatment systems.

The Town of Dillsboro, with a 1950 population of 198, discharges untreated domestic sewage from a population of 200 into Scott Creek via three municipal outfalls. Here again as for the Town of Sylva, it is difficult to separate the pollutional effects of the wastes from Mead Corporation from that from the Town of Dillsboro except by the increase in the numbers of coliform bacteria found in the water below the pollution from this Town. The water at Sampling Station No. 44, which is above the pollution from the Town of Dillsboro, contained an average coliform bacteria content of 150,000 (MPN) per 100 ml.,

while at Sampling Station No. 45, located below the Town approximately 500 feet from the mouth of Scott Creek, this number increased to an average of 270,000 (MPN) per 100 ml. While all of this increase may not be attributed to the Town of Dillsboro, they are still responsible for a portion of the overall pollution load in Scott Creek and Tuckasegee River. This amount of pollution may seem small in comparison to the overall picture, but the Town of Dillsboro should in the interest of cooperation and good sanitation practices make plans to provide a reasonable degree of treatment for this domestic sewage.

Summary Discussion of Pollution in Scott Creek

The pollution in Scott Creek is from four sources namely; J. L. Collville Construction Company, Mead Corporation-Sylva Division, the Town of Sylva, and the Town of Dillsboro. This combination of both domestic sewage and industrial waste produces a total P.E. of 521,200, all of which is from Mead Corporation except a P.E. of 1,200. All of this waste is discharged to the stream without treatment. In addition to the above organic waste, the waste water from the J. L. Collville Construction Company's gravel operation is discharged to Scott Creek when the plant is operating. The effects of the gravel washing operation are noted at Sampling Station No. 40 by a rise in total solids to 282 ppm from 98 ppm found above the operation at Sampling Station No. 38-A. Below the Mead Corporation outfalls, the water is devoid of dissolved oxygen most of the time and continues to be so until Scott Creek enters Tuckasegee River where there is some improvement. When the waters of Scott Creek and Tuckasegee River become mixed, the average D.O. becomes 3.0 ppm, although it is reduced to zero on occasion. The effects of the paper mill waste is also detected in the increased dissolved and total solids as well as by the increase in color. The Towns of Sylva and Dillsboro increase the bacterial pollution in Scott Creek as indicated by an increase in coliform bacteria from 18,000 (MPN) per 100 ml. at Sampling Station No. 39 above all known pollution from the Dillsboro-Sylva area to 270,000 (MPN) per 100 ml. at Sampling Station No. 45 near its mouth.

The answer to the pollution problem in Scott Creek is not dependent upon Mead Corporation alone, but depends upon a concerted effort by all polluters located on the Creek to remove his share of the pollution which constitutes the majority of that in the Little Tennessee River Basin. In this connection, it is possible that the industrial waste and sewage from the Mead Corporation and the sewage from the Towns of Dillsboro and Sylva could be treated in a central waste treatment plant to the mutual advantage of all parties concerned. It is, therefore, recommended that the respective officials consider such a possibility as they review their responsibilities and plan for pollution abatement measures.

The Community of Whittier is an unincorporated settlement with a 1950 population of 287. The Community does not have a unified sewage collection system; however, there are privately-owned sewers, to which four to six houses may be connected, discharging untreated domestic sewage into Tuckasegee River. Most of the homes and business establishments located on the banks of the river discharge sewage into the river by means of their own private line or a common line with other houses as noted above. In addition to these homes and business establishments, the Whittier School with an enrollment of 291 discharges untreated domestic sewage into Tuckasegee River from the left bank below Sampling Station No. 49. It is evident that the pollution from this Community is having its effect upon Tuckasegee River as shown by the condition

of the water at Sampling Station No. 49 which had an average coliform bacteria content of 31,000 (MPN) per 100 ml. and an average dissolved oxygen content of 5.3 ppm. These determinations indicated that the rate of recovery of the river from upstream pollution was retarded by the raw sewage from Whittier.

Although the Community has no unified sewerage system, the citizens should, for the sake of good sanitation and protection of the river, remove this pollution from Tuckasegee River individually or make plans for a centralized collection system and treatment facilities. In this connection, the Swain County Board of Education should make arrangements to treat the domestic sewage at the Whittier School.

The Village of Cherokee, located within the Cherokee Indian Reservation and with a 1950 population of 500, has a separate-type sewage collection system that presently serves a permanent, or wintertime population of 1,500. This number includes the enrollment of the Cherokee Indian School and its permanent faculty. During the summer and early fall many thousands of tourists visit this area creating a burden on the existing utilities. Although many will remain but for a short period in the reservation, it is estimated at the present time that the overnight resident population will be increased by another 1,500 people, giving a total summer population of 3,000.

The village has a secondary-type treatment plant consisting of a grit chamber, primary and secondary settling facilities, trickling filter and provisions for recirculation and chlorination. During the period of winter flows, the plant is apparently obtaining maximum reduction of B.O.D. when given proper maintenance and operation. This also appeared to be true during the summer months of 1958 at the time of the stream studies. Examination of the analyses of water collected from Oconaluftee River both above and below the point of discharge of the plant effluent shows that the treated sewage was having but little affect upon the river. On the other hand, this plant is presently heavily overloaded during the tourist season and the former high degree of treatment is not being achieved, although every effort is being made to operate and maintain the plant. While no samples have been collected from the river this year, it can be anticipated that the plant effluent is adversely affecting the river.

The Bureau of Indian Affairs is not unmindful of present conditions. A study has been made of both the water and sewerage systems, including the sewage treatment plant, preparatory to the construction of improved water service and expanded sewage treatment facilities. When the plans for improvement of the sewage treatment plant becomes a reality, they will aid greatly in maintaining Oconaluftee River for its best use.

The Communities of Ela and Governors Island, with 1950 populations of 200 and 75, respectively, extend from near the mouth of Oconaluftee River to the U. S. Highway 19 bridge crossing the Tuckasegee River. These communities have no unified sewage collection systems and as a result, many private homes and a number of motels and guest homes along the two rivers and their tributaries discharge untreated or inadequately treated sewage into these receiving waters. These discharges not only create local nuisances but add to the degraded condition of both rivers.

As noted previously in this report, the effluent from the Village of Cherokee sewage treatment plant was having but little affect upon Oconaluftee River during the period of the 1958 stream studies, although it was anticipated that the present seasonal demands upon this plant did have an adverse

affect upon the river. In 1958, the average coliform bacteria density was but 2,500 (MPN) per 100 ml. at Sampling Station No. 53 some 1,500 feet below the Cherokee effluent outfall, while at Sampling Station No. 54 near the mouth of the river the average density of such bacteria was 15,000 (MPN) per 100 ml., with numbers being found as high as 93,000 (MPN) per 100 ml. It becomes obvious that pollution was entering the river from the population residing in the area lying between the lower sampling station and the upper sampling station. Tuckasegee River below Oconaluftee River continued to show evidence of upstream pollution, although lesser numbers of coliform bacteria were found at Sampling Station No. 55 than at the sampling station at Whittier. However, there was a sharp rise in the numbers of coliform bacteria at Sampling Station No. 56 below the more concentrated population in the communities of Ela and Governors Island. The average number of such bacteria at this sampling station was 62,000 (MPN) per 100 ml., with numbers being found as high as 240,000 (MPN) per 100 ml.

The most satisfactory solution to the problems arising from the indiscriminate pollution of these streams would be the installation of unified sewage collection systems and treatment facilities. A still better approach would be a single sewerage system operated jointly by the two communities. The Swain County Health Department should encourage the citizens of the two communities to this end and if the suggested solution is not practicable, they should secure the installation of individual sewage treatment systems in order that these streams will be protected for their beneficial uses.

The Town of Bryson City, with a 1950 population of 1,499, is located on both sides of Tuckasegee River. The Town has a separate-type sewage collection system serving a population of 1,200 in the winter months and 2,200 during the summer season. The untreated waste, which is only domestic sewage, is discharged to the river via 22 outfalls, six of which are on the right, or northwest side of the river, while the remaining 16 are on the left, or southeast side. This does not include an unknown number of private homes, motels, guest homes or business establishments which have their own private outfalls. The river in this area is still discolored by the upstream discharge of industrial waste; however, floating matter and a grayish color in the river is still visible at times indicating the presence of domestic sewage. The discharge of untreated sewage from the Town causes sludge deposits in the river and increases the B.O.D. of the river water which retards the recovery of the dissolved oxygen assets of the river previously lowered by upstream pollution. As the river flows toward the Town, after receiving the pollution from the communities of Ela and Governors Island, there is a tendency for the coliform bacteria to decrease in numbers, only to increase again as the river receives the full impact from the sewage discharged from the Bryson City outfalls. The water at Sampling Station No. 60, below all of the pollution arising in this Town, contained an average coliform bacteria density of 55,000 (MPN) per 100 ml.

The Town of Bryson City should make plans to collect all of the sewage from these outfalls and convey it to an appropriate site where it may receive the degree of treatment necessary to protect the beneficial uses made of the receiving waters. In making these plans, consideration should be given to the inclusion of all areas of the Town not now on the municipal system. The Town and their consulting engineers should also consider the expanded population during the tourist season, both at the present and for the future. The Town of Bryson City is located near the backwaters of Fontana Lake and the removal or treatment of this pollution, as well as that upstream, will be necessary to protect the present and future beneficial uses of Little Tennessee River as well as Tuckasegee River.

Summary Discussion of Pollution in Segment II

As noted previously, this Segment of the Little Tennessee River and its tributaries receive the largest amount of the pollution in the entire Basin, the majority of which is industrial waste from the Mead Corporation-Sylva Division which is discharged into Scott Creek. While this is true, there is also domestic sewage being discharged into the main stem of the river and many of its tributaries. The Town of Franklin discharges both untreated and partially treated domestic sewage into Little Tennessee River which causes only a small depression in dissolved oxygen but a large increase in the numbers of coliform bacteria. The Town of Highlands discharges domestic sewage from an inadequate sewage treatment plant into Mill Creek only a short distance above Mirror Lake, the location of unorganized bathing. The inadequately treated sewage creates health hazards in both Mill Creek and Mirror Lake which should not be used for bathing under present conditions. The effluent from Western Carolina College's sewage treatment plant at Cullowhee, which is discharged into Cullowhee Creek near its mouth, causes an increase in numbers of coliform bacteria in this creek which are reduced to acceptable levels by dilution in Tuckasegee River. A combination of the domestic sewage from the Towns of Sylva and Dillsboro and the industrial waste from Mead Corporation causes the water in Scott Creek to be generally devoid of dissolved oxygen and greatly increases the coliform bacteria content and the color to an objectionable dark brown. These conditions continue to prevail with slight improvement after Scott Creek has joined Tuckasegee River. Near the mouth of Tuckasegee River, the untreated domestic sewage from the Town of Bryson City adds to the already degraded condition of the river. The effluent from the secondary-type sewage treatment plant of the Village of Cherokee and the Cherokee Indian Reservation unduly increases the coliform bacteria content of Oconaluftee River during the summer season when the plant is overloaded. In addition to the above-mentioned organic wastes, the solids content and turbidity of Scott Creek, Little Tennessee River, Nantahala River, Cowee Creek, and Caler Fork Creek are increased by the discharge of mining wastes to these streams. The Communities of Whittier and Ela, and the Town of Webster do not have unified sewage collection systems but add noticeably to the already polluted streams by discharge of domestic sewage from many private outfalls or disposal systems. In this connection, it should be noted that it appears to be a common practice for property owners, whose premises are not connected to public sewage collection systems, to run a private outfall to the nearest creek.

Of the 13 points of significant pollution located within this Segment, only five have treatment facilities. Only three of these; namely, Bradley Packing Company, Western Carolina College, and the Village of Cherokee are operating at a degree of efficiency which is helping to protect the water resources of the Little Tennessee River Basin. The officials of these places are to be commended for leading the way to cleaner and safer streams. Also to be commended is Mead Corporation-Sylva Division for initiating studies designed to eventually control the waste from this large industry. It is gratifying to note that the Bureau of Indian Affairs is conducting studies for the purpose of improving the Cherokee sewage treatment plant. Those who have taken no action to meet their respective responsibilities are urged to do so as soon as possible.

SEGMENT III. LITTLE TENNESSEE RIVER AND ITS TRIBUTARIES FROM UPSTREAM SIDE OF MOUTH OF HAZEL CREEK TO FONTANA DAM

This Segment of the river, which is only approximately 3.25 miles long, contains only one semi-public water supply. The Fontana Village Resort,

operated by Government Service Corporation, obtains a maximum of 0.193 MGD of raw water, from Fontana Lake through an intake on the upstream face of Fontana Dam. The water receives conventional treatment before being pumped into the distribution system. Samples taken at Sampling Station No. 62, located at the raw water intake at the filter plant, contained an average coliform bacteria content of <15 (MPN) per 100 ml., indicating the supply is safe for a water supply receiving conventional treatment.

The waters of this Segment are excellent for fishing especially the Hazel Creek and Eagle Creek arms of Fontana Reservoir. The upstream portion of these arms are designated mountain trout streams.

There are no known organized bathing or recreation areas or points of significant pollution located on this Segment of the river.

SEGMENT IV. LITTLE TENNESSEE RIVER AND ITS TRIBUTARIES FROM FONTANA DAM TO NORTH CAROLINA-TENNESSEE STATE LINE

This final segment of Little Tennessee River, which is approximately 11 miles long, is made up largely of Lake Cheoah and the drainage area of Cheoah River. The entire area is very mountainous and sparcely populated with the Town of Robbinsville being the only notable center of population. During the summer large numbers of tourists visit the mountain resorts of Fontana Village and Tapoco, Inc., to increase the population of this area.

There are two semi-public water supplies and one public water supply located within this area. The Village at the Santeetlah Powerhouse obtains raw water from Dednan Branch. After receiving only chlorination, this water serves a population of 26 with 1,500 G.P.D. The Town of Robbinsville, which serves a population of 499 with 75,000 G.P.D., obtains its raw water from Long Creek, a tributary of Cheoah River. The water receives only chlorination as treatment. Tapoco, Inc., obtains its water from Yellowhammer Branch, another tributary of Cheoah River. This water system serves a population of 107 with 15,000 G.P.D. This number includes 75 employees of the Cheoah Powerhouse and their families and an average of 32 quests at the lodge. This number may be smaller during the winter months; however, the lodge is open all year. The treatment given the water in this system consists of settling as well as chlorination.

The Streams in the entire area, with a few exceptions, are excellent for fishing. In fact, a majority of the streams are designated mountain trout streams. This includes the entire area of Lake Cheoah and many of the arms of Santeetlah Lake. The lake itself is too warm to support mountain trout. Another haven to the sportsman located within this area is The Santeetlah Wildlife Management Area. There are no known organized bathing areas in this Segment, however, there are two known camp grounds within the area which are part of the Nantahala National Forest. These are White Pines Camp Ground, and Snowbird Camp Ground, both in Graham County. There are also many unnamed camp areas in the Great Smoky Mountains National Park in Swain County. Also located in this Segment is the scenic attraction of forest resources, "Joyce Kilmer Memorial Forest".

The terrain does not lend itself to agricultural pursuits and there is very little farming in this area, and no known irrigation systems.

There are four known sources of significant pollution on this Segment of the Little Tennessee River and its tributaries. One is located on the main stem and three are located on its tributaries. All of these are domestic

sewage only. These produce a total estimated population equivalent (P.E.) of 2,283 before treatment and 1,758 after treatment. While only one location has treatment facilities, this results in an overall reduction in B.O.D. of 23 percent. In addition to the above, the unsewered Community of Bethel near Tapoco, Inc., presents a special local problem. The four known sources of pollution are as follows:

Fontana Village, with a 1950 population of 375, is a summer resort with a present year-round population of 250 served by the utilities. During the peak of the tourist season and if all of the available accommodations are filled, this number will be increased to 1,500. The Village has a separate-type sewage collection system and a sewage treatment facility consisting of an Imhoff tank and sludge drying beds. The effluent is discharged into the backwaters of Lake Cheoah (Little Tennessee River) just below the tailrace from Fontana Dam. This plant is well-operated and maintained and has little noticeable effect on the river other than a slightly visible gray streak in the stream and a slight skum along the bank for a short distance downstream. If this plant is continued to be well-operated and maintained, no further action should be necessary provided Fontana Village does not increase its housing accommodations. Caution should be taken not to allow the Imhoff tank to become septic due to a longer detention time during the warmer off-season months. This could be prevented by recirculation or pumping river water into the influent line. The power house, the observation tower, and the maintenance shops at Fontana Dam are all served by septic tanks and nitrification lines.

Santeetlah Village, with a population of 26, is owned and maintained by Tapoco, Inc., a subsidiary of The Aluminum Company of America. The Village is made up entirely of personnel of the Santeetlah Powerhouse and their families. A separate-type sewage collection system serves the entire village. The toilets in the powerplant, serving six employees, are discharged directly to Lake Cheoah. The domestic sewage from the Village system is discharged to Deaver Branch without treatment. This is a small stream and the addition of this sewage causes a slight increase in B.O.D. and an average coliform bacteria content of 290,000 (MPN) per 100 ml. a short distance downstream from the outfall. Tapoco, Inc., should remove this local nuisance and health hazard for their own benefit as well as for the protection of the stream. The small volume of sewage from this Village and powerhouse could readily and economically be disposed of by underground means.

The Town of Robbinsville, with a 1950 population of 499, has a separate type sewage collection system serving a total population of 650. The waste is entirely domestic sewage and is discharged into Cheoah River via two outfalls, Long Creek via two outfalls, and Tulula Creek via one outfall. One of the outfalls on Cheoah River contains the sewage from the Robbinsville School with an enrollment of 255. The upstream outfall on Long Creek sewers the Village of Milltown and also contains the domestic sewage from James Lees and Sons Company, Fontana Mills Division. At this point, it should be noted that the industrial waste from this mill, which consists of residue latex rubber used as backing for rugs, is collected in two lagoons. When one of these lagoons is filled, the other is backfilled with dirt and liquid allowed to seep into the ground, then another lagoon is dug. It is believed that this waste will not reach the stream in the near future.

The condition of the stream below each of the above-mentioned outfalls is generally the same; a cloudy gray color in the water, with sludge banks, floating solids, and paper tissue along the banks for some distance downstream. Because of the turbulence and velocity of the streams, the dissolved oxygen content is affected very little; however, the B.O.D. is increased

slightly and the coliform bacteria content is excessive. The water at Sampling Station No. 74, located near the mouth of Long Creek and below two minicipal outfalls, contained an average coliform bacteria content of 150,000 (MPN) per 100 ml., while that at Sampling Station No. 73, located above all municipal outfalls on Long Creek, contained an average of 160,000 (MPN) of such bacteria per 100 ml. It should be noted in this connection that the banks of Long Creek are well-populated and many of these houses have private outfalls. The water at Sampling Station No. 71, located on Cheoah River below all municipal outfalls on Cheoah River and Tulula Creek, contained an average coliform bacteria content of 470,000 (MPN) per 100 ml. This is considerably higher than the number of bacteria in samples taken in the streams above these outfalls. While this is so, it should be noted that an average coliform bacteria content of 73,000 (MPN) per 100 ml. was found at Sampling Station No. 70, on Sweetwater Creek, and an average coliform bacteria content of 22,000 (MPN) per 100 ml. was found at Sampling Station No. 69 on Tulula Creek, presumably above the pollution from the Town system. This indicates that domestic sewage is also entering these streams from private outfalls. The water at Sampling Station No. 75, located near the highwater point of the backwaters of Santeetlah Lake and below all pollution from the Town of Robbinsville, contained an average coliform bacteria content of 75,000 (MPN) per 100 ml., thus indicating unsatisfactory recovery from the bacterial pollution. It is obvious from the large numbers of coliform bacteria found in these streams and from visual observations that the Town of Robbinsville should provide treatment for all wastes within the Town limits in order to remove a public health hazard. If it is not practical and economically feasible for the Town to accept the waste from private outfalls outside their limits, the affected citizens should be encouraged to provide adequate private disposal systems.

During the preliminary study of this section of the Little Tennessee River Basin, a complaint was made by officials of James Lees and Sons Company regarding the condition of Long Creek adjacent to their industrial water intake. An investigation showed that the water was highly turbid and contained large quantities of bark, leaves, and dirt originating at the Bemis Hardwood Lumber Company at Milltown. Every effort should be made to remove this debris from Long Creek. This could be done by proper control of drainage from the storage yards and screening of the process water.

Tapoco, Inc., located at the mouth of Cheoah River, has a sewage collection system serving a tourist lodge and the homes of the families of employees of the Cheoah Power Plant. The homes, the lodge, and the power plant, are owned by the Aluminum Company of America. The system serves 75 people living in the village and an average of 32 guests living at the lodge, making a total of 107 during the summer. Although the lodge is open all year, this number would be reduced to an average of 85 in the winter. The domestic sewage is discharged untreated to Cheoah River via three outfalls. The toilets at the Cheoah Power House, which serve an average of six employees, discharge directly to Little Tennessee River. During low flow periods, which occur during the tourist season in the summer, these discharges causes undesirable odors and unsightly conditions due to paper tissue, solids, and other debris collecting on the rocks and in the pools. The increase in the coliform bacteria content is indicated by samples taken at Sampling Station No. 76, located above all known pollution from Tapoco, Inc., which had an average coliform bacteria content of 2,600 (MPN) per 100 ml. and by samples taken at Sampling Station No. 79, located below these three outfalls and the pollution in Meadow Branch, which had an average coliform bacteria content of 20,000 (MPN) per 100 ml. Tapoco, Inc., should provide treatment of this waste in order to protect the beneficial uses made of Cheoah River as well as insure the safty of those in this area. The sewage from the Power House should be treated in

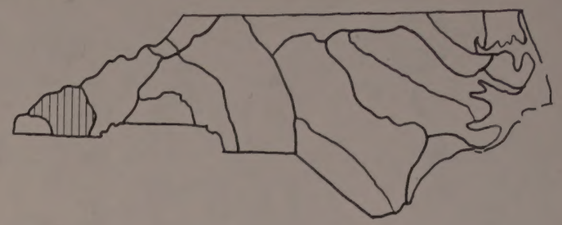
a sub-surface system, unless it can readily be treated in facilities provided for the village.

The Community of Bethel, located on Meadow Branch between Tapoco, Inc., and Santeetlah Village, does not have a unified sewage collection system; however, the condition of Meadow Branch near its mouth indicates sizable quantities of domestic sewage are being discharged to the stream from private outfalls or disposal systems. Samples taken at Sampling Station No. 77 on Meadow Branch had an average coliform bacteria content of 49,000 (MPN) per 100 ml. with a high of 93,000 (MPN) per 100 ml. found on two occasions. The stream bed contains a layer of algae and the water had a distinctive sewage odor. The Community contains 27 houses, one store, and a church, many of which discharge sewage to this stream. The Graham County Health Department should take note of this obvious nuisance and public health hazard. The Department should aid the Community in providing a central collection and treatment system or individual systems in order that the public health hazard will be removed and to protect the beneficial uses made of this stream and Cheoah River to which it is tributary.

Summary Discussion of Pollution in Segment IV

The four points of significant pollution located on this final Segment of Little Tennessee River and its tributaries are located far enough apart to show very little relationship with each other. The Town of Robbinsville, the largest source of pollution in the Segment, has a problem that includes pollution in three different streams, Long Creek, Tulula Creek, and Cheoah River. Also located on the streams in the Robbinsville area are many private outfalls and a lumber mill which tend to add greatly to the pollution already in the streams. The sewage from Santeetlah Village and Tapoco, Inc., is discharged into nearby streams, causing local nuisances and health hazards which create unpleasant conditions for those living near by or those who only visit the area to enjoy the beautiful natural resources. The Community of Bethel creates health hazards by indiscriminate discharge of sewage into a small stream flowing through the area. Fontana Village operates and maintains a treatment plant that adequately serves all accommodations presently located at the resort area. The water at Sampling Station No. 80, located below all pollution in the Little Tennessee River Basin and only 1.6 miles above the Tennessee State Line, contained adequate dissolved oxygen and an average coliform bacteria content of only 290 (MPN) per 100 ml., indicating the river had recovered sufficiently from the upstream pollution so as not to have any serious interstate implications.

The Town of Robbinsville, Santeetlah Village, Tapoco, Inc., and the Bemis Hardwood Lumber Company should take immediate steps to provide such treatment as may be necessary to protect the beneficial uses made of the streams below the pollution for which they are responsible. The Graham County Health Department should encourage the Community of Bethel to provide a central sewage collection system and treatment facility and should this not be feasible, then the Department should require the installation of individual treatment systems in order that Meadow Branch will be protected for its essential uses.



LITTLE TENNESSEE RIVER BASIN
And
SAVANNAH RIVER DRAINAGE AREA

POINTS OF SIGNIFICANT SOURCES OF POLLUTION

MUNICIPAL WASTES. Number indicates sewage population equivalent released to stream.

MUNICIPAL WASTES. Number indicates sewage population equivalent before treatment.

INDUSTRIAL WASTES. Number indicates sewage population equivalent released to stream.

INDUSTRIAL WASTES. Number indicates sewage population equivalent before treatment.

MINE SITES **MINING WASTES.**

Areas of the symbols are proportionate to the population served or population equivalent for those values over 100

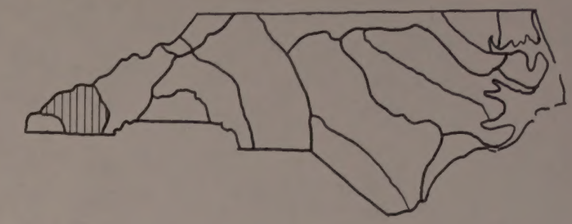
N

NORTH CAROLINA
STATE STREAM SANITATION COMMITTEE

STATE DEPARTMENT OF WATER RESOURCES
DIVISION OF STREAM SANITATION AND HYDROLOGY
RALEIGH 1960

SCALE MILES

MAP 1



LITTLE TENNESSEE RIVER BASIN
And
SAVANNAH RIVER DRAINAGE AREA

PUBLIC AND INDUSTRIAL SURFACE WATER SUPPLIES RECREATION AREAS AND IRRIGATION SOURCES

- PUBLIC SURFACE WATER SUPPLY. Number indicates million gallons per day.
- INDUSTRIAL SURFACE WATER SUPPLY. Number indicates million gallons per day.
- 0.11 — IRRIGATION PUMP. Number indicates capacity of pump in cubic feet per second.
- PUBLIC RECREATION AREA.
- NATIONAL PARK. Approximate boundary.
- WILDLIFE MANAGEMENT AREA. Approximate boundary.

NORTH CAROLINA
STATE STREAM SANITATION COMMITTEE

STATE DEPARTMENT OF WATER RESOURCES
DIVISION OF STREAM SANITATION AND HYDROLOGY
RALEIGH 1960

SCALE MILES 0 1 2 3 4 5 6 7 8 9 10

MAP 2

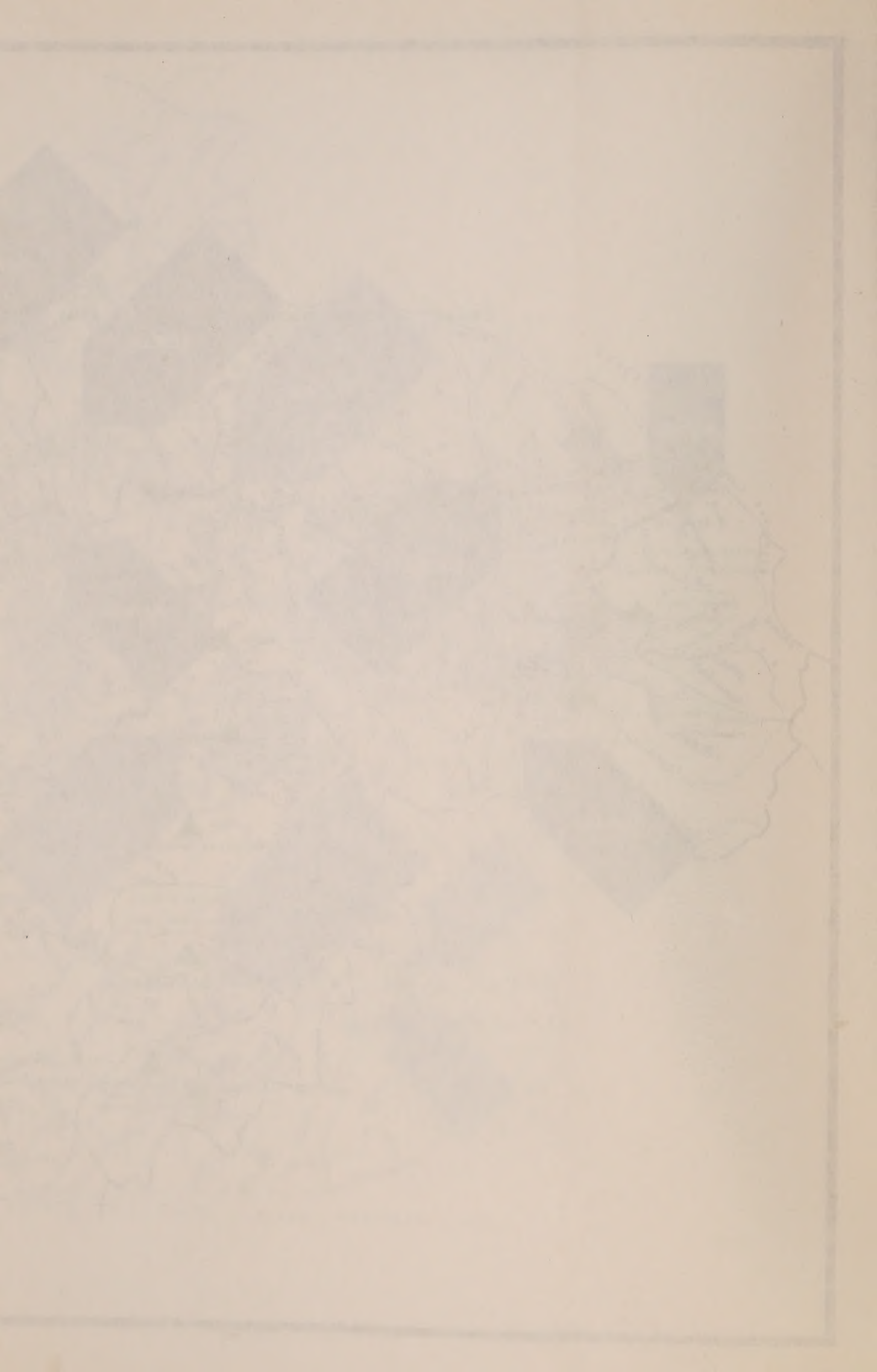


TABLE 1

SAMPLING POINTS AND GAGING STATIONS
LITTLE TENNESSEE RIVER BASIN

Sta. No.	Location	Stage Ref.	Mileage from N. C. - Tenn. State Line or Mouth of Tributary	Drainage Area in Sq.Mi.
	Little Tennessee River at N.C.-Ga. State line	-	85.2	49.4
1	Little Tennessee River near Norton, N. C.	R.P.	82.6*	63.8
	Little Tennessee River at Cartoogechaye Creek	-	68.0*	-
	Cartoogechaye Creek at Wayah Creek	-	11.0a	-
2	Wayah Creek at Wayah State Park near Franklin, N. C.	-	2.4a	9.58
3	Cartoogechaye Creek at Franklin, N. C.	R.P.	1.9a	57.1
4	Cartoogechaye Creek near Franklin, N. C.	-	1.7a	57.1
5	Little Tennessee River near Franklin, N. C.	R.P.	66.6*	201
	Little Tennessee River at Cullasaja River	-	66.4*	-
	Cullasaja River at Mill Creek	-	19.1a	-
6	Mill Creek at U.S.Hwy. #64 at Highlands, N.C.	R.P.	1.2a	1.15
7	Mill Creek at Highlands, N. C.	-	1.0a	1.15
8	Mill Creek near Highlands, N. C.	R.P.	0.2a	1.56
9	Cullasaja River (Mirrow Lake) near Highlands,N.C.	-	19.0a	-
	Cullasaja River at Big Creek	-	17.8a	-
	Big Creek at Houston Branch	-	2.2a	-
10	Houston Branch near Gneiss, N. C.	-	0.9a	0.21
11	Cullasaja River near Highlands, N. C.	-	17.4a	14.4
12	Cullasaja River at Highlands, N. C.	R.	16.9a	14.9
	Cullasaja River at Skitty Creek	-	15.6a	-
13	Skitty Creek (Cliffside Lake) near Gneiss,N.C.	-	0.5a	-
	Cullasaja River at Brush Creek	-	11.9a	-
	Brush Creek at Rattlesnake Branch	-	2.8a	-
14	Rattlesnake Branch near Gneiss, N. C.	-	0.8a	.17
15	Cullasaja River near Franklin, N. C.	R.P.	0.5a	93.0
16	Little Tennessee River below Franklin, N. C.	-	64.7*	300
17	Little Tennessee River below Franklin Dam near Franklin, N. C.	-	62.2*	310
18	Little Tennessee River at Iotla, N. C.	R.P.	60.3*	323
	Little Tennessee River at Cowee Creek	-	56.8*	-
	Cowee Creek at Caler Fork Creek	-	2.6a	-
19	Caler Fork Creek at Macon Mining Company near Wests Mill, N. C.	-	1.5a	4.13
20	Caler Fork Creek near Wests Mill, N. C.	R.P.	1.4a	4.13
21	Cowee Creek near Wests Mill, N. C.	R.P.	0.7a	25
	Little Tennessee River near Needmore, N. C.	R.	43.6*	436
22	Little Tennessee River near Bryson City, N. C.	-	37.6*	448
	Little Tennessee River at Nantahala River	-	35.0*	-
23	Nantahala River near Nantahala, N. C.	P.	12.5a	133
	Nantahala River at Queens Creek	-	12.3a	-
23A	Queens Creek at Queens Creek Power Plant near Nantahala, N. C.	P.	0.1a	Indet.
24	Nantahala River at Nantahala, N. C.	R	10.0a	144
25	Nantahala River at Hewitt, N. C.	-	9.0a	147

Sta. No.	Location	Stage Ref.	Mileage from N.C. - Tenn. State Line or Mouth of Tributary	Drainage Area in Sq.Mi.
	Little Tennessee River at Tuckasegee River	-	26.2*	-
27	Tuckasegee River near Tuckasegee, N. C.	-	49.9a	83.4
	Tuckasegee River at West Fork Tuckasegee River	-	49.1a	-
26	West Fork Tuckasegee River near Glenville, N. C.	R.P.	0.6a	55.3
28	Tuckasegee River at Tuckasegee, N. C.	R.	48.1a	143
29	Tuckasegee River at Cullowhee, N. C.	R.P.	40.4a	207
	Tuckasegee River at Cullowhee Creek	-	40.2a	-
29A	Cullowhee Creek below Wolf Creek near Cullowhee, N. C.	R.P.	5.8a	6.90
	Cullowhee Creek at Tilley Creek	-	3.2a	-
	Tilley Creek at Flat Branch	-	1.3a	-
31	Flat Branch near Cullowhee, N. C.	-	0.5a	.06
29B	Tilley Creek near Cullowhee, N. C.	R.P.	0.4a	6.02
29C	Cullowhee Creek near Cullowhee, N. C.	R.P.	3.0a	18.3
	Cullowhee Creek at Long Branch	-	1.1a	-
32	Long Branch at Cullowhee, N. C.	-	1.9a	.28
32A	Long Branch near Cullowhee, N. C.	R.P.	1.8a	.44
30	Cullowhee Creek at Cullowhee, N. C.	R.P.	1.0a	23
33	Cullowhee Creek at Western Carolina College at Cullowhee, N. C.	-	0.1a	23
34	Cullowhee Creek at mouth at Cullowhee,N.C.	R.P.	0	23.4
35	Tuckasegee River near Cullowhee, N. C.	R.P.	39.6a	231
36	Tuckasegee River above Scott Creek at Dillsboro, N. C.	R.P.	31.1a	288
	Tuckasegee River at Scott Creek	-	31.0a	-
38A	Scott Creek above Beta, N. C.	R.P.	6.3a	37.6
	Scott Creek at Fisher Creek	-	4.7a	-
37	Fisher Creek near Sylva, N. C.	-	2.1a	.65
	Fisher Creek at Dills Creek	-	1.1a	-
38	Dills Creek near Sylva, N. C.	-	2.5a	.69
39	Scott Creek near Beta, N. C.	R.P.	4.2a	48.0
40	Scott Creek above Sylva, N. C.	R.	3.3a	50.7
41	Scott Creek at Sylva, N. C.	-	2.4a	55.0
42	Scott Creek at City Hall Bridge at Sylva, N. C.	R.P.	2.2a	55.2
43	Scott Creek near U. S. Hwy. #19A at Sylva, N. C.	-	1.7a	57
44	Scott Creek above Dillsboro, N. C.	R.P.	0.6a	58.6
45	Scott Creek at Dillsboro, N. C.	R.P.	0.1a	58.6
45A	Tuckasegee River at Dillsboro, N. C.	R.	30.4a	347
45B	Tuckasegee River at Southern Railroad Trestle near Dillsboro, N. C.	-	29.8a	348
45C	Tuckasegee River at Dicks Creek, N. C.	-	28.9a	350
46	Tuckasegee River at Barkers Creek, N. C.	R.P.	26.8a	360
47	Tuckasegee River near Wilmot, N. C.	-	25.1a	369
48	Tuckasegee River at Wilmot, N. C.	R.P.	23.9a	370
49	Tuckasegee River at Whittier, N. C.	R.P.	20.0a	400
	Tuckasegee River at Oconaluftee River	-	18.0a	-
	Oconaluftee River at Mingus Creek	-	11.4a	-
51	Mingus Creek at Ravensford, N. C.	-	1.1a	4.70

Sta. No.	Location	Stage Ref.	Mileage from N.C. - Tenn. State Line or Mouth of Tributary	Drainage Area in Sq.Mi.
	Oconaluftee River at Raven Fork	-	10.6a	-
50	Raven Fork at Big Cove Ranch nr.Cherokee,N.C.	-	6.7a	-
52	Oconaluftee River at Cherokee, N. C.	O.S.	6.8a	131
53	Oconaluftee River Below U.S. Hwy. #441 at Cherokee, N. C.	-	6.6a	180
54	Oconaluftee River at Ela, N. C.	R.P.	0.2a	188
55	Tuckasegee River at Ela, N. C.	R.P.	17.2a	598
56	Tuckasegee River at U.S. Hwy. #19 near Bryson City, N. C.	O.S.	14.4a	603
	Tuckasegee River at Deep Creek	-	13.0a	-
57	Deep Creek near Bryson City, N. C.	O.S.	2.3a	40.2
57A	Deep Creek at Bryson City, N. C.	-	0.1a	43.9
58	Tuckasegee River at Bryson City, N. C.	R.	12.5a	655
60	Tuckasegee River near Bryson City, N. C.	-	11.7a	660
	Tuckasegee River at Jenkins Branch	-	11.6a	-
59	Jenkins Branch near Bryson City, N. C.	-	1.7a	0.34
	Tuckasegee River at Lands Creek	-	9.2a	-
61	Lands Creek near Bryson City, N. C.	-	3.2a	2.52
62	Little Tennessee River (Fontana Reservoir) near Fontana, N. C.	P	11.3*	1571
63	Little Tennessee River (Lake Cheoah) at Fontana, N. C.	-	10.5*	1571
64	Little Tennessee River (Lake Cheoah) near Fontana,N. C.	-	10.2*	1571
65	Little Tennessee River (Lake Cheoah) at Santeetlah Village, N. C.	-	7.2*	1583
	Little Tennessee River at Dednam Branch	-	7.1*	-
66	Dednam Branch at Santeetlah Village, N. C.	-	0.5a	0.26
	Dednam Branch at Deaver Branch	-	0.1a	-
67	Deaver Branch at Santeetlah Village, N. C.	R.P.	0.2a	0.71
68	Little Tennessee River (Lake Cheoah) near Santeetlah Power Plant at Santeetlah Village, N. C.	-	6.7*	1583
	Little Tennessee River at Cheoah River	-	1.7*	-
	Cheoah River at Tulula Creek	-	17.6a	-
69	Tulula Creek at Robbinsville, N. C.	R.P.	0.6a	28.6
	Cheoah River at Sweetwater Creek	-	17.6a	-
70	Sweetwater Creek near Robbinsville, N. C.	R.P.	0.6a	13.6
71	Cheoah River at Robbinsville, N. C.	R.P.	17.0a	43.1
	Cheoah River at Long Creek	-	16.9a	-
72	Long Creek near Milltown, N. C.	-	4.3a	4.58
73	Long Creek at Milltown, N. C.	O.S.	1.4a	6.03
74	Long Creek at Robbinsville, N. C.	R.P.	0.3a	11.8
75	Cheoah River near Robbinsville, N. C.	-	16.1a	55.3
76	Cheoah River near Tapoco, N. C.	-	0.5a	213
	Cheoah River at Meadow Branch	-	0.4a	-
77	Meadow Branch near Tapoco, N. C.	R.P.	0.4a	0.69
	Cheoah River at Yellowhammer Branch	-	0.4a	-
78	Yellowhammer Branch at Tapoco, N. C.	-	0.4a	1.07
79	Cheoah River at Tapoco, N. C.	O.S.	0.2a	215

Sta. No.	Location	Stage Ref.	Mileage from N.C. - Tenn. State Line or Mouth of Tributary	Drainage Area in Sq.Mi.
80	Little Tennessee River at Tapoco, N. C.	P.	1.6*	1823
	North Carolina - Tennessee State Line	-	0	1824

R - Continuous Water Level Recorder

O. S. - Outside Staff Gage

R. P. - Reference Point

P. - Power Company Records

* - Miles from North Carolina - Tennessee State Line

a - Miles from Mouth of Tributary

TABLE 2

PUBLIC AND SEMI-PUBLIC SURFACE WATER SUPPLIES

LITTLE TENNESSEE RIVER BASIN

Location	Pop. 1950	Est. Pop. Served	Est. Consumption M.G.D.	Ownership	Source of Supply	Impounded	Design Capacity M.G.D.	Treatment
Bryson City - Winter	1,499	1,600	0.160	M	Lands Creek[1]	Yes	-	Chlorination
- Summer		2,500	0.250		Jenkins Branch			
Cherokee - Winter	500	1,500	0.170	Fed.	Mingus Creek	Yes	-	Settling, chlorination
- Summer		3,000	0.250					
Fontana Village - Winter	375	250	0.080	Fed.	Little Tennessee River	Yes	-	Conventional
- Summer		1,500	0.193		(Fontana Lake)			
Highlands - Winter	514	550	0.200	M	Houston Branch[2]	Yes	-	Chlorination
- Summer		4,000	0.300		Rattlesnake Branch			
Robbinsville	499	499	0.075	M	Long Creek	Yes	-	Chlorination
Santeetlah Village (Alcoa)	26	26	0.0015	P	Dednan Branch	Yes	-	Chlorination
Sylva	1,382	2,900	0.300	M	Fisher Creek	No	-	Settling, filtration,
					Dills Creek			chlorination
Tapoco, Inc. (Alcoa)	75	107	0.015	P	Yellowhammer Branch	Yes	-	Settling, chlorination
Western Carolina College		1,700	0.150	State	Long Branch	No	-	Filtration, chlorination
					Flat Branch			

(1) Also 2 wells as auxiliary supply.
(2) Also 3 wells as auxiliary supply.

TABLE 3

INDUSTRIAL SURFACE WATER SUPPLIES

LITTLE TENNESSEE RIVER BASIN

Location and Industry	Average MGD used	Ownership	Source of Supply	Impounded	Treatment
Associated Mica Mining Co. at Lotla	Unknown	P	Little Tennessee	No	None
Collville, J. L. Construction Co. near Sylva	Unknown	P	Scott Creek	No	None
James Lees and Sons Co.-Fontana Mills Div. at Robbinsville	0.012	P	Long Creek	No	Filtration
Macon Mining Co. near Wests Mill	Unknown	P	Calar Fork Creek	No	None
Mead Corporation - Sylva Division	3.700	P	Scott Creek	No	Settling & Conventional
Nantahala Limestone & Talc Co. near Nantahala	Unknown	P	Nantahala River	No	None

TABLE 4

PUBLIC GROUND WATER SUPPLIES

LITTLE TENNESSEE RIVER BASIN

Location	Pop. 1950	Est. Pop. Served	Owner-ship	Estimated Consuption M.G.D.	No. of Wells	Estimated Total Yield M.G.D.	Date Installed	Treatment
Bryson City	1,499	1,600	M	(1)	2	0.430	1958 1937	Chlorination
Dillsboro	198	200	M	0.020	2	0.375	1940 - 1956	None
Franklin - Winter	1,975	2,240	M	0.250	8	0.300	1908 - 1957	Chlorination
- Summer		5,240		0.350				
Webster	142	142	M	0.0015	2 springs	-	-	Chlorination
Highlands - Winter	514	550	M	(1)	3	0.102	-	None
- Summer		4,000						

(1) Supplementing surface supply

Industrial

Bradley Packing Co. near Dillsboro	-	-	M	0.005	1	-	-	None

TABLE 5

POINTS OF SIGNIFICANT SOURCES OF POLLUTION
LITTLE TENNESSEE RIVER BASIN

Location	Pop. 1950	Est. Pop. Served	Owner-ship	Kind of Waste	Est. Gals. Waste M.G.D.	Type Treat-ment	Design-Capa-city M.G.D.	Est. P.E. Before Treatment	Est. P.E. After Treatment	Receiving Stream and Interconnecting Streams to Main River
Bradley Packing Company (Near Dillsboro)	-	-	P	I.W.	0.005	Secondary	-	411	164	Savannah Cr. to Tucka-segee R. to Little Tennessee River.
Bryson City - Winter	1,499	1,200	M	D.S.	0.120	None	-	1,200	1,200	Tuckasegee R. to Little
- Summer		2,200			0.220			2,200	2,200	Tennessee River.
Cherokee - Winter	500	1,500	Fed.	D.S.	0.170	Secondary	0.195	1,500	225	Occonaluftee R. to
- Summer		3,000			0.250			3,000	750	Tuckasegee R. to Little Tennessee River.
Dillsboro	198	200	M	D.S.	0.020	None	-	200	200	Scott Creek to Tucka-segee R. to Little Tennessee River.
Fontana Village - Winter	375	250	Fed.	D.S.	0.025	Primary	0.150	250	163	Little Tennessee River
- Summer		1,500			0.150			1,500	975	(Lake Cheoah)
Franklin - Winter	1,975	400	M	D.S.& I.W.	0.052	Primary	0.125	4,036	4,036	Little Tennessee River
		545	M	D.S.	0.087	None	-	545	545	Little Tennessee River
- Summer		1,900	M	D.S.& I.W.	0.107	Primary	0.125	5,536	5,536	
		1,150	M	D.S.	0.122	None		1,150	1,150	
Franklin Hosiery Company	-	450	P	D.S.	0.045	Secondary	-	150	38	Cartoogechaye Cr. to Little Tennessee River.
Highlands - Winter	514	200	M	D.S.	0.020	Primary	0.010	200	200	Mill Cr. to Cullasaja
- Summer		500			0.050			500	500	River to Little Tenn-essee River.
Mead Corporation - Sylva Div.	-	300	P	D.S.& I.W.	3.700	None	-	520,000	520,000	Scott Creek to Tucka-segee River to Little Tennessee River.
Robbinsville	499	650	M	D.S.	0.090	None	-	650	650	Long Cr. and Tulula Cr. to Cheoah River and Cheoah River to Little Tennessee River.
Sylva	1,382	1,000	M	D.S.	0.104	None	-	1,000	1,000	Scott Creek to Tucka-segee River to Little Tennessee River.

TABLE 5 (cont.)

POINTS OF SIGNIFICANT SOURCES OF POLLUTION
LITTLE TENNESSEE RIVER BASIN

Location	Pop. 1950	Est. Pop. Served	Owner-ship	Kind of Waste	Est. Gals Waste M.G.D.	Type Treat-ment	Design Capa-city M.G.D.	Est. P.E. Before Treatment	Est. P.E. After Treatment	Receiving Stream and Interconnecting Streams to Main River
Santeetlah Village (Alcoa)	26	26	P	D.S.	0.0015	None	-	26	26	Deaver Br. to Dednan Br to Little Tennessee R.
Tapoco, Inc. (Alcoa)	75	107	P	D.S.	0.015	None	-	107	107	Cheoah R. To Little Tennessee River.
Western Carolina College at Cullowhee	-	1,800	State	D.S.	0.150	Secondary	0.332	1,800	270	Cullowhee Cr. to Tuckasegee River to Little Tennessee River.

TABLE 6

POINTS OF SIGNIFICANT SOURCES OF POLLUTION
(MINING OPERATIONS)
LITTLE TENNESSEE RIVER BASIN

Location	Product	Kind of Waste	Type Treatment	Receiving Stream and Interconnecting Streams to Main River
Associated Mica Mining Company near Iotla	Scrap Mica	I.W.	None	Little Tennessee River.
Collville, J. L. Construction Company near Sylva	Crushed Stone	I.W.	None	Scott Creek to Tuckasegee River to Little Tennessee River.
Macon Mining Company near Wests Mill	Scrap Mica	I.W.	None	Caler Fork Creek to Cowee Creek to Little Tennessee River.
Nantahala Limestone and Talc Company near Nantahala	Crushed Limestone	I.W. D.S.	None Septic Tank and N. F.	Nantahala River to Little Tennessee River.

TABLE 7
SCHOOLS
LITTLE TENNESSEE RIVER BASIN

Name of School	En-roll-ment	Water Supply (Type)	Lunch Room	Type of Treatment Sewage	Receiving Stream
Graham County					
Stecoah School	214	Springs (3)	Yes	None	Cody Branch
Jackson County					
Canada School	149	Well	Yes	Septic Tank - Sand Filter	Unnamed Tributary to Tennessee Cr. to East Fork Tuckasegee R.
Glenville	450	Well	Yes	Septic Tank - Sand Filter	West Fork Tuckasegee River - Glenville Lake
Johns Creek School	114	Well	No	Septic Tank - Nitrification Field	None
Log Cabin School	240	Well	No	Septic Tank - Sand Filter	Tuckasegee River
New Jackson School	72	Well	No	Septic Tank - Sand Filter Trench	Scott Creek
Savannah School	400	Well	Yes	Septic Tank - Sand Filter	Tuckasegee River
Scott Creek School	500	Well	Yes	Septic Tank - Sand Filter	Scott Creek
Soco School (Indian)	125	Well	No	Septic Tank - Sand Filter Trench	Soco Creek
Qualla School	275	Well	No	Septic Tank - Nitrification Field	None
Webster School	400	Well	No	Septic Tank - Sand Filter	Tuckasegee River
Tuckasegee School	87	Well	No	Septic Tank - Nitrification Field	None
Macon County					
Cullasaja School	220	Well	Yes	None	Cullasaja River
Cowee School	249	Well	Yes	Septic Tank - Sand Filter Trench	Cowee Creek to Little Tennessee R.
Highlands High School	230	Town of Highlands	Yes	Septic Tank - Sand Filter	Mill Creek
Iotla School	240	Well	Yes	Septic Tank - Nitrification Field	None
Union School	210	Well	Yes	Septic Tank - Nitrification Field	None
Nantahala School	286	Well	Yes	None	Partridge Creek to Nantahala R.
Otto School	240	Well	Yes	Septic Tank	Little Tennessee River Tributary
Swain County					
Alarka School	234		Yes	Septic Tank - Nitrification Field	None
Almond School	309		Yes	Septic Tank - Nitrification Field	None

TABLE 7 (cont.)
SCHOOLS
LITTLE TENNESSEE RIVER BASIN

Name of School	Enrollment	Water Supply (Type)	Lunch Room	Type of Treatment Sewage	Receiving Stream
Swain County (continued)					
Birdtown (Indian) Cherokee Reservation	89		No	Septic Tank - Nitrification Field	None
Big Cove (Indian) Cherokee Reservation	91		No	Septic Tank - Nitrification Field	None
Snowbird (Indian) Cherokee Reservation	56		Yes	Septic Tank - Nitrification Field	None
Whittier School	291		Yes	None	Tuckasegee River
Clay County					
No schools in Little Tennessee River Basin					
Transylvania County					
No schools in Little Tennessee River Basin					

TABLE 8
PRISON CAMPS
LITTLE TENNESSEE RIVER BASIN

Location	No.	Camp Capacity	No. Inmates	No. Personnel	Total Pop.	Water Supply (Type)	Type Treatment (Sewage)	Receiving Stream Tributary to Main River
Jackson County								
N. C. Prison	146	100	121	16	137	Deep Well	Septic Tank	Tuckasegee River
Macon County								
N. C. Prison	147	75	79	16	95	Town of Franklin	Septic Tank - Sand Filter	Little Tennessee River Tributary to Little Tennessee River

TABLE 7
SCHOOLS
LITTLE TENNESSEE RIVER BASIN

Name of School	Enrollment	Water Supply (Type)	Lunch Room	Type of Treatment Sewage	Receiving Stream
Graham County					
Stecoah School	214	Springs (3)	Yes	None	Cody Branch
Jackson County					
Canada School	149	Well	Yes	Septic Tank - Sand Filter	Unnamed Tributary to Tennessee Cr. to East Fork Tuckasegee R.
Glenville	450	Well	Yes	Septic Tank - Sand Filter	West Fork Tuckasegee River - Glenville Lake
Johns Creek School	114	Well	No	Septic Tank - Nitrification Field	None
Log Cabin School	240	Well	No	Septic Tank - Sand Filter	Tuckasegee River
New Jackson School	72	Well	No	Septic Tank - Sand Filter Trench	Scott Creek
Savannah School	400	Well	Yes	Septic Tank - Sand Filter	Tuckasegee River
Scott Creek School	500	Well	Yes	Septic Tank - Sand Filter	Scott Creek
Soco School (Indian)	125	Well	No	Septic Tank - Sand Filter Trench	Soco Creek
Qualla School	275	Well	No	Septic Tank - Nitrification Field	None
Webster School	400	Well	No	Septic Tank - Sand Filter	Tuckasegee River
Tuckasegee School	87	Well	No	Septic Tank - Nitrification Field	None
Macon County					
Cullasaja School	220	Well	Yes	None	Cullasaja River
Cowee School	249	Well	Yes	Septic Tank - Sand Filter Trench	Cowee Creek to Little Tennessee R.
Highlands High School	230	Town of Highlands	Yes	Septic Tank - Sand Filter	Mill Creek
Iotla School	240	Well	Yes	Septic Tank - Nitrification Field	None
Union School	210	Well	Yes	Septic Tank - Nitrification Field	None
Nantahala School	286	Well	Yes	None	Partridge Creek to Nantahala R.
Otto School	240	Well	Yes	Septic Tank	Little Tennessee River Tributary
Swain County					
Alarka School	234		Yes	Septic Tank - Nitrification Field	None
Almond School	309		Yes	Septic Tank - Nitrification Field	None

TABLE 7 (cont.)
SCHOOLS
LITTLE TENNESSEE RIVER BASIN

Name of School	En-roll-ment	Water Supply (Type)	Lunch Room	Type of Treatment Sewage	Receiving Stream
Swain County (continued)					
Birdtown (Indian) Cherokee Reservation	89		No	Septic Tank - Nitrification Field	None
Big Cove (Indian) Cherokee Reservation	91		No	Septic Tank - Nitrification Field	None
Snowbird (Indian) Cherokee Reservation	56		Yes	Septic Tank - Nitrification Field	None
Whittier School	291		Yes	None	Tuckasegee River
Clay County					
No schools in Little Tennessee River Basin					
Transylvania County					
No schools in Little Tennessee River Basin					

TABLE 8
PRISON CAMPS
LITTLE TENNESSEE RIVER BASIN

Location	No.	Camp Capacity	No. Inmates	No. Personnel	Total Pop.	Water Supply (Type)	Type Treatment (Sewage)	Receiving Stream Tributary to Main River
Jackson County								
N. C. Prison	146	100	121	16	137	Deep Well	Septic Tank	Tuckasegee River
Macon County								
N. C. Prison	147	75	79	16	95	Town of Franklin	Septic Tank - Sand Filter	Little Tennessee River Tributary to Little Tennessee River

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 1 - Located on Little Tennessee River near Norton, N. C., to define condition of water entering North Carolina from Georgia. Drainage Area (sq. mi.) 63.8

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-10	T	1100	136	19	9	20	6.2	0	11	8	0	9.2	98	2.1	1,900	4,300
6-30	M	1030	98	18	5	25	6.9	0	10	6	1	8.9	93	1.0	660	930
7-15	T	0610	-	16*	7*	45*	6.8*	0*	13*	8*	0.5*	8.2*	82*	2.1*	-	2,300*
7-30	W	0830	158	18	8	15	7.1	0	11	9	0.5	8.2	86	1.2	1,300	4,300
8-22	F	1200	112	20	7	10	6.6	0	10	6	0.5	8.5	93	0.6	450	4,300
9-22	M	0945	101	18	12	30	6.7	0	7	13	0.5	8.0	84	1.7	1,200	9,300
Average			121	19	8	20	6.2 to 7.1	0	10	8	1	8.6	91	1.3	1,100	4,600

* Rating Undefined - Excluded from average.

Station 2 - Located on Wayah Creek at Arrowood Glade to define quality of water for bathing. Drainage Area (sq. mi.) 9.58

6-10	T	1330	-	18	2	15	6.2	0	9	5	0	9.4	99	0.5	-	73
6-30	M	1520	-	20	1	9	6.8	0	10	6	0	8.5	93	1.1	-	430
7-15	T	1120	-	19	4	7	6.9	0	9	5	0	8.6	92	1.3	-	-
7-30	W	1030	-	20	5	7	7.0	0	11	9	0.5	8.2	89	0.7	-	930
8-22	F	1120	-	21	3	9	6.6	0	10	5	0	8.8	98	0.9	-	930
Average			-	20	3	9	6.2 to 7.0	0	10	6	0	8.7	94	0.9	-	590

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 3 - Located on Cartoogechaye Creek above treated domestic sewage from Franklin Hosiery Company. Drainage Area (sq. mi.) 57.1

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-10	T	1200	95	18	6	20	6.2	0	10	10	0	8.7	93	1.1	710	4,300
6-30	M	1120	72	20	4	15	6.8	0	15	11	2	8.8	96	0.7	340	430
7-15	T	0640	118	18	13	40	7.1	0	15	11	0	8.4	88	1.5	1,200	7,500
7-30	W	0840	75	21	7	10	7.0	0	32	13	0.5	8.1	90	0.8	410	4,300
8-22	F	1225	59	22	6	9	6.5	0	5	12	0.5	8.3	94	1.3	520	4,300
9-22	M	1110	66	20	11	30	6.8	0	8	15	1	8.4	92	1.8	800	24,000
9-29	M	1100	45	16	12	7	6.9	0	16	12	0.5	9.5	95	1.3	400	4,300
Average			76	19	8	20	6.2 to 7.1	0	14	12	1	8.6	93	1.2	630	7,000

Station 4 - Located on Cartoogechaye Creek to define the condition of water below point of discharge of treated domestic sewage from Franklin Hosiery Company. Drainage Area (sq. mi.) 57.1

6-10	T	1230	95	18	4	20	6.2	0	11	10	0	8.6	90	1.2	770	4,300
6-30	M	1140	72	21	4	15	6.9	0	14	10	1	8.7	97	0.6	290	230
7-15	T	0710	118	19	13	50	6.9	0	13	14	0.5	8.4	90	0.8	640	7,500
7-30	W	0910	75	21	8	15	6.9	0	18	14	0.5	8.0	89	0.4	200	4,300
8-22	F	1235	59	22	7	9	6.7	0	15	13	0.5	8.4	95	0.6	240	9,300
9-22	M	1130	66	21	12	25	6.8	0	11	16	2	8.5	95	1.7	760	4,300
9-29	M	1120	45	16	12	7	6.8	0	15	14	0.5	9.4	94	0.7	210	9,300
Average			76	20	9	20	6.2 to 6.9	0	14	13	1	8.6	93	0.9	440	5,600

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 5 - Located on Little Tennessee River to define the condition of water above all pollution from Franklin. Drainage Area (sq. mi.) 201

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-12	Th	1100	374	20	6	20	6.6	0	19	13	1	8.1	88	1.3	3,300	46,000
6-30	M	1300	247	19	5	20	6.8	0	10	9	0.5	8.5	91	0.6	1,000	930
7-15	T	0850	-	18*	11*	45*	7.1*	0*	14*	7*	0*	8.1*	85*	1.4*	-	2,300*
7-30	W	0945	382	20	8	15	6.9	0	16	17	0.5	7.8	85	0.6	1,500	4,300
8-22	F	1250	245	22	7	9	6.6	0	15	7	0.5	8.3	94	0.8	1,300	9,300
9-22	M	1155	294	20	11	50	6.8	0	10	14	1.0	8.3	91	1.9	3,800	9,300
9-29	M	0940	-	15*	10*	9*	6.7*	0*	11*	25*	0.5*	9.0*	89*	0.8*	-	930*
Average			308	20	7	25	6.6 to 7.1	0	14	12	1	8.2	90	1.0	2,200	14,000

* Excluded from average - rating undefined.

Station 6 - Located on Mill Creek to define the condition of water above all pollution from Highlands. Drainage Area (sq. mi.) 1.15

6-11	W	1100	1.8	17	14	15	6.0	0	6	6	0.5	7.6	78	1.9	23	930
7-1	T	1315	1.1	20	17	9	6.7	0	10	6	1	8.2	90	1.8	13	930
7-25	F	0700	5.7	16	43	20	6.8	0	6	7	0	8.0	80	1.0	38	110,000
8-21	Th	1525	1.8	22	16	9	6.6	0	20	5	0.5	7.6	86	2.5	30	9,300
9-15	M	0900	1.1	17	19	15	7.2	0	7	7	0.5	8.4	86	0.7	5	930
9-23	T	1845	1.2	17	41	45	6.8	0	10	4	0.5	7.5	77	1.5	12	2,400
9-29	M	0800	1.2	10	23	10	6.5	0	7	8	2	9.2	81	1.5	12	9,300
9-30	T	0710	1.1	13	32	15	7.1	0	10	7	1.0	8.7	82	1.2	9	4,300
10-3	F	0655	2.1	12	29	15	7.1	-	-	5	0.5	8.7	80	0.6	9	11,000
Average			1.9	16	26	15	6.0 to 7.2	0	10	6	1	8.2	82	1.4	17	17,000

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 7 - Located on Mill Creek 50' below point of effluent discharge from septic tank at Highlands. Drainage Area (sq. mi.) 1.15

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-11	W	1130	3.1	19	21	20	6.6	0	14	9	4	7.3	78	>8.3*	>170*	430,000
7-1	T	1340	1.1	20	23	20	6.8	0	18	9	3	7.1	77	13	97	430,000
7-25	F	0730	7	17	48	15	6.6	0	5	6	0	8.3	85	2.7	130	430,000
8-21	Th	1545	2.4	22	28	15	7.4	0	25	7	5	7.0	79	6.9	110	93,000
9-15	M	0940	1.2	18	110	40	10.5	50	92	4	8	7.2	75	16	130	93,000
9-23	T	1900	2.1	17	46	40	8.1	0	42	8	2	3.4	35	23	330	930,000
9-29	M	0815	1.2	11	23	10	6.5	0	10	14	2	9.2	83	7.5	61	1,500,000
9-30	T	0700	1.1	12	33	30	6.4	0	10	9	2	8.5	78	5.9	44	930,000
10-3	F	0640	3.4	12	29	20	7.0	-	-	6	1	9.1	84	41	940	>1,100,000*
Average			3	16	40	25	6.4 to 10.5	0 Usually	27	8	3	7.5	75	15	230	600,000

Station 8 - Located on Mill Creek above Mirror Lake and 0.5 of a mile below Station #7 and pollution from Highlands. Drainage Area (sq. mi.) 1.56

6-11	W	1200	3.7	16	11	15	6.1	0	9	7	2	8.1	81	2.0	50	43,000
7-1	T	1500	1.2	16	13	20	6.7	0	11	7	2	8.6	86	2.1	17	43,000
7-25	F	0820	11	15	43	20	6.6	0	9	8	0.5	8.3	82	1.3	97	430,000
8-21	Th	1700	3.0	19	16	9	6.7	0	15	9	2	7.5	80	4.1	83	43,000
9-15	M	1000	1.6	15	15	25	6.5	0	8	12	1	8.4	83	1.0	11	24,000
9-23	T	1945	2.5	16	33	15	7.0	0	15	7	3	6.3	63	3.1	52	460,000
9-29	M	0835	1.6	10	17	10	6.4	0	10	13	2	9.1	80	2.3	25	43,000
9-30	T	0725	1.5	13	34	25	6.4	0	12	12	1	8.5	80	1.2	12	43,000
10-30	F	0620	4.1	12	25	20	6.5	-	-	9	1.0	7.8	72	13	360	>110,000*
Average			3	15	23	20	6.1 to 7.0	0	11	9	2	8.1	79	3.3	79	140,000

* Indeterminate - Excluded from average.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 9 - Located on Mirror Lake below partially treated sewage from Highlands to define condition of water for trout stream. (Cullasaja River)

Date Collected 1958	Day	Time	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	Coliform M.P.N. per 100 ml.
6-11	W	1230	21	20	15	6.0	0	6	5	0	7.5	83	2.4	9,300
7-1	T	1400	22	28	20	6.6	0	8	5	0.5	7.5	85	2.9	230
7-25	F	0850	16	120	15	6.1	0	9	6	0	7.2	72	1.4	24,000
8-21	Th	1600	26	27	15	6.7	0	10	5	0	8.6	105	4.0	2,300
9-15	M	1050	16	22	25	6.8	0	6	5	0.5	8.2	82	0.9	4,300
9-29	M	0845	15	27	9	6.2	0	7	13	1.0	7.3	72	3.2	9,300
9-30	T	0735	16	27	20	6.2	0	9	5	0.5	7.8	78	3.4	930
10-3	F	0610	12	44	15	6.5	-	-	4	3	8.0	74	0.8	110,000
Average			18	39	15	6.0 to 6.8	0	8	6	1	7.8	81	2.4	20,000

Station 10 - Located on Houston Branch to define the condition of water for public water supply, Town of Highlands. Drainage Area (sq. mi.) .21

6-11	W	1400	23	15	15	5.9	0	4	4	0.5	7.1	82	1.8	9.1
7-1	T	1200	21	25	20	6.5	0	9	4	0.5	6.6	73	1.4	<3.6*
7-25	F	0930	19	48	15	6.2	0	5	5	0	7.4	78	1.6	23
8-21	Th	1800	25	22	10	6.5	0	10	3	0	7.2	86	1.6	<3.6*
9-15	M	0815	18	22	10	6.8	0	5	3	0	7.5	79	0.4	93
Average			21	26	15	5.9 to 6.8	0	7	4	0	7.2	80	1.4	42

* Indeterminate - excluded from average.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 11 - Located on Cullasaja River to define overflow and leakage conditions of water below Highlands' Power Dam at Lake Sequoyah. Drainage Area (sq. mi.) 14.4

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day ppm 20°C	B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-11	W	1600	26	23	15	15	6.5	0	6	7	1	7.8	90	1.4	250	93
7-1	T	1120	15	22	20	15	6.7	0	11	10	0.5	7.4	84	1.6	160	43
7-25	F	1040	86	17	120	35	6.2	0	6	8	0	7.0	72	0.9	520	11,000
8-21	Th	1810	24	23	23	25	6.5	0	10	4	0.5	8.1	93	1.6	260	430
9-15	M	0700	14	19	17	15	6.8	0	6	8	0.5	8.0	86	0.4	38	430
Average			33	21	39	20	6.2 to 6.8	0	8	7	1	7.7	85	1.2	250	2,400

Station 12 - Located on Cullasaja River to define condition of water below Highlands' Hydroelectric Plant supplied from Lake Sequoyah. Drainage Area (sq. mi.) 14.9

6-11	W	1515	27	21	12	9	6.0	0	5	5	0.5	7.4	82	1.0	180	430
7-1	T	1100	16	20	18	15	6.5	0	10	6	0.5	7.6	83	1.0	110	230
7-25	F	1135	89	17	120	25	6.5	0	7	5	0	8.1	83	0.7	420	4,300
8-21	Th	1830	25	22	24	15	6.7	0	15	7	0	7.5	85	1.4	240	9.1
9-15	M	0720	14	19	16	15	6.5	0	7	6	0	7.6	81	0.5	47	430
Average			34	20	38	15	6.0 to 6.7	0	9	6	0	7.6	83	0.9	200	1,100

TABLE 9
ANALYTICAL RESULTS
LITTLE TENNESSEE RIVER BASIN

Station 13 (Middle) - Located on Cliffside Lake to define the condition of water for bathing.

Date Collected 1958	Day	Time	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	Coliform M.P.N. per 100 ml. R*	Coliform M.P.N. per 100 ml. M	Coliform M.P.N. per 100 ml. L#
6-11	W	1630	21	10	20	5.8	0	5	3	0	8.1	90	1.2	43	93	23
7-1	T	1045	22	12	20	6.7	0	10	4	0	8.2	93	1.4	<3.6	<3.6	<3.6
7-25	F	1205	20	85	25	6.0	0	4	4	0	7.2	79	0.8	4,600	230	430
8-21	Th	1900	25	23	20	6.7	0	15	8	0.5	7.5	90	1.3	3.6	<3.6	<3.6
Average			22	33	20	5.8 to 6.7	0	9	5	0	7.8	88	1.2			

*13R - 50' to right of center. #13L - 50' to left of center.

Station 14 - Located on Rattlesnake Branch above intake to define the quality of water for public water supply for Town of Highlands. Drainage Area (sq. mi.) .17

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-11	W	1415	-	15	8	15	5.6	0	5	3	.5	7.8	77	0.9	-	<3.6*
7-1	T	1230	-	14	11	20	6.6	0	11	4	0	7.6	73	0.7	-	<3.6*
7-25	F	1020	-	15	43	15	6.2	0	4	4	0	7.8	77	0.7	-	23
8-21	Th	1740	-	20	16	15	6.5	0	30	3	0	7.6	83	1.3	-	3.6
9-15	M	1120	-	14	11	10	6.4	0	4	2	0	7.7	74	0.3	-	43
Average			-	16	18	15	5.6 to 6.6	0	11	3	0	7.7	77	0.8	-	23

* Indeterminate - excluded from average.

Station 15 - Located on Cullasaja River above its confluence with Little Tennessee River. Drainage Area (sq. mi.) 93.0

6-12	Th	1045	140	20	7	35	6.3	0	12	9	0.5	8.2	89	0.7	660	1,500
6-30	M	1315	102	21	5	15	6.7	0	10	7	0.5	8.7	97	0.6	410	930
7-15	T	0810	225	19	14	20	6.7	0	11	9	0	8.2	88	1.3	2,000	930
7-30	W	0630	152	19	12	15	6.8	0	12	8	0.5	7.7	82	1.0	1,000	4,300
8-22	F	1305	119	22	10	10	6.7	0	20	11	0.5	7.9	89	0.6	480	430
9-22	M	1205	97	20	19	35	6.8	0	7	17	1	8.3	91	1.4	920	11,000
9-29	M	0925	70	15	12	9	6.4	0	11	13	0.5	9.0	89	0.9	430	-
Average			129	19	11	20	6.3 to 6.8	0	12	11	1	8.3	89	0.9	840	3,200

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 16 - Located on Little Tennessee River below effluent from Franklin Imhoff tank and untreated sewage from several private and public outfalls. Drainage Area (sq. mi.) 300

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-12	Th	1230	515	22	7	25	6.0	0	19	18	1	7.8	89	1.4	4,900	46,000
6-30	M	1330	350	21	5	15	6.7	0	11	7	0.5	8.4	94	1.7	4,000	1,900
7-15	T	1030	785	20	12	40	6.6	0	8	15	1	8.0	87	1.1	58,000	91,000
7-30	W	0650	535	21	10	15	6.9	0	12	21	0.5	7.5	83	1.7	6,100	190,000
8-22	F	1400	365	23	9	15	6.6	0	10	10	0.5	7.2	83	1.7	4,200	76,000
9-22	M	1450	390	21	16	25	6.7	0	14	14	1	7.9	88	1.7	4,500	23,000
9-29	M	1035	-*	17*	9*	10*	6.4*	0*	14*	14*	1*	8.9*	91*	1.4*	-*	60,000*
Average			490	21	10	25	6.0 to 6.9	0	12	14	1	7.8	87	1.6	4,900	71,000

Station 17 - Located on Little Tennessee River below tailrace from Franklin Power Plant. Drainage Area (sq. mi.) 310

6-12	Th	1130	534	21	8	40	6.2	0	12	11	0.5	7.2	80	1.0	3,600	43,000
6-30	M	1350	343	21	6	15	6.6	0	16	7	0.5	7.5	83	0.8	1,900	930
7-15	T	0930	734	20	11	25	6.5	0	10	10	0.5	7.8	85	1.0	5,000	9,300
7-30	W	0715	616	21	12	25	6.9	0	14	16	0.5	6.8	76	0.9	3,700	240,000
8-22	F	1335	-*	18*	10*	15*	6.7*	0*	15*	8*	0.5*	7.0*	73*	0.6*	-*	9,300*
9-22	M	1430	640	20	20	50	6.8	0	9	12	0.5	7.4	81	1.5	6,500	4,300
9-29	M	1010	242	18	13	25	6.4	0	13	17	0.5	7.6	80	1.2	2,000	93,000
Average			518	20	12	30	6.2 to 6.9	0	12	12	1	7.4	81	1.1	3,800	65,000

* Excluded from average - flow undetermined.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 18 - Located on Little Tennessee River to define the condition of water below all pollution at Franklin. Drainage Area (sq. mi.) 323

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	M.P.N. lbs/day 25°C	M.P.N. per 100 ml.	Colif. Settleable Solids ml/l
6-12	Th	1500	640	24	9	35	-	-	-	6.2	0	10	10	0.5	8.9	104	0.4	1,700	2,400	-
6-30	M	1440	410	22	8	15	-	-	-	6.7	0	10	8	1	8.8	100	0.7	1,900	430	-
7-15	T	1200	-	20*	11*	40*	-	-	-	6.6*	0*	12*	7*	1*	8.1*	88*	0.8*	-	9,300*	-
7-30	W	0745	-	21*	12*	15*	-	-	-	6.8*	0*	15*	18*	0.5*	7.5*	83*	1.4*	-	43,000*	-
8-22	F	1420	390	24	12	15	-	-	-	6.6	0	20	9	0.5	8.6	101	2.1	5,500	930	0.1
9-22	M	1520	370	20	24	40	-	-	-	6.9	0	10	13	0.5	8.0	87	1.5	3,700	2,300	-
9-29	M	1245	210	19	12	20	-	-	-	7.0	0	14	15	0.5	9.5	102	1.0	1,400	15,000	-
Average			404	22	13	25	-	-	-	6.2 to 7.0	0	13	11	1	8.8	99	1.1	2,800	4,200	

* Excluded from average - rating undefined.

Station 19 - Located on Caler Fork Creek above the point of discharge of industrial waste from Macon Mining Company. Drainage Area (sq. mi.) 4.13

6-13	F	1000	3.8	20	7	35	-	-	-	6.8	0	12	12	1	8.2	89	0.8	21	930	0.2
7-1	T	1615	3.8	23	8	40	-	-	-	6.7	0	13	11	0	7.9	91	0.7	18	2,300	-
7-15	T	1255	6.0	22	6	40	71	34	105	6.7	0	9	11	0.5	8.0	91	1.8	73	1,500	0.2
7-30	W	1415	5.0	24	8	15	79	39	118	6.7	0	15	23	0.5	7.5	88	1.4	47	2,300	0.2
8-22	F	0815	3.2	19	6	15	32	47	79	6.5	0	10	13	0.5	8.4	90	0.9	19	230	0.1
9-22	M	1550	3.8	21	9	35	26	-	-	6.8	0	11	17	0.5	8.1	90	1.0	26	4,300	0.2
9-24	W	0810	5.3	16	10	15	35	-	-	6.7	0	14	14	0.5	9.0	90	0.6	21	230	0.2
9-30	T	0855	11	15	6	20	8	-	-	6.5	0	13	10	0.5	9.2	91	0.6	45	430	0.2
10-2	Th	0850	5.6	14	7	15	-	-	-	6.9	0	15	10	0.5	9.3	90	1.2	45	-	-
Average			5	19	7	25	42	-	-	6.5 to 6.9	0	12	13	1	8.4	90	1.0	35	1,500	0.2

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 20 - Located on Caler Fork Creek to define condition of water below Macon Mining Company and above five ruby mines. (Macon Mining Company not operating) Drainage Area (sq. mi.) 4.13

Date Col. 1958	Day	Time	Dis. cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.	Settleable Solids ml/l
6-13	F	1015	3.8	20	4	50	-	-	-	6.6	0	12	12	0.5	8.2	89	1.0	26	2,400	0.3
7-1	T	1640	3.8	23	5	45	-	-	-	6.8	0	15	11	0	8.0	92	0.8	21	230	-
7-15	T	1310	6.0	22	7	50	63	49	112	6.7	0	14	9	0	7.9	89	1.2	49	-	0.3
7-30	W	1430	5.0	24	10	25	80	42	122	6.8	0	22	16	0.5	7.5	88	1.5	51	2,300	0.3
8-22	F	0830	3.2	19	7	15	45	40	85	6.8	0	20	14	0.5	8.4	90	0.4	9	430	0.5
Average			4.4	22	7	35	63	44	106	6.6 to 6.8	0	17	12	0.5	8.0	90	1.0	31	1,300	.4

Station 20 - Located on Caler Fork Creek to define condition of water below Macon Mining Company and above five ruby mines. (Macon Mining Company operating) Drainage Area (sq. mi.) 4.13

9-22	M	1605	3.8	20	5	4,000	7,752	-	-	6.9	0	11	20	0.5	8.1	88	1.2	31	2,300	40.0
9-24	W	0825	5.3	17	7	600	7,871	-	-	6.8	0	13	16	0.5	9.1	93	0.5	18	430	34.0
9-30	T	0900	11	15	7	1,750	7,116	-	-	6.4	0	14	12	0.5	9.4	93	0.2	15	2,300	36.0
10-2	Th	0900	5.6	14	6	5,500	7,004	-	-	6.5	0	13	10	5	9.3	90	0.7	26	-	-
Average			6	17	6	3,000	7,436	-	-	6.4 to 6.9	0	13	15	2	9.0	91	0.7	23	1,700	36.7

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 18 - Located on Little Tennessee River to define the condition of water below all pollution at Franklin. Drainage Area (sq. mi.) 323

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	M.P.N. lbs/day 25°C	M.P.N. per 100 ml.	Colif. Settleable Solids ml/l
6-12	Th	1500	640	24	9	35	-	-	-	6.2	0	10	10	0.5	8.9	104	0.4	1,700	2,400	-
6-30	M	1440	410	22	8	15	-	-	-	6.7	0	10	8	1	8.8	100	0.7	1,900	430	-
7-15	T	1200	-	20*	11*	40*	-	-	-	6.6*	0*	12*	7*	1*	8.1*	88*	0.8*	-	9,300*	-
7-30	W	0745	-	21*	12*	15*	-	-	-	6.8*	0*	15*	18*	0.5*	7.5*	83*	1.4*	-	43,000*	-
8-22	F	1420	390	24	12	15	-	-	-	6.6	0	20	9	0.5	8.6	101	2.1	5,500	930	0.1
9-22	M	1520	370	20	24	40	-	-	-	6.9	0	10	13	0.5	8.0	87	1.5	3,700	2,300	-
9-29	M	1245	210	19	12	20	-	-	-	7.0	0	14	15	0.5	9.5	102	1.0	1,400	15,000	-
Average			404	22	13	25	-	-	-	6.2 to 7.0	0	13	11	1	8.8	99	1.1	2,800	4,200	

* Excluded from average - rating undefined.

Station 19 - Located on Caler Fork Creek above the point of discharge of industrial waste from Macon Mining Company. Drainage Area (sq. mi.) 4.13

6-13	F	1000	3.8	20	7	35	-	-	-	6.8	0	12	12	1	8.2	89	0.8	21	930	0.2
7-1	T	1615	3.8	23	8	40	-	-	-	6.7	0	13	11	0	7.9	91	0.7	18	2,300	-
7-15	T	1255	6.0	22	6	40	71	34	105	6.7	0	9	11	0.5	8.0	91	1.8	73	1,500	0.2
7-30	W	1415	5.0	24	8	15	79	39	118	6.7	0	15	23	0.5	7.5	88	1.4	47	2,300	0.2
8-22	F	0815	3.2	19	6	15	32	47	79	6.5	0	10	13	0.5	8.4	90	0.9	19	230	0.1
9-22	M	1550	3.8	21	9	35	26	-	-	6.8	0	11	17	0.5	8.1	90	1.0	26	4,300	0.2
9-24	W	0810	5.3	16	10	15	35	-	-	6.7	0	14	14	0.5	9.0	90	0.6	21	230	0.2
9-30	T	0855	11	15	6	20	8	-	-	6.5	0	13	10	0.5	9.2	91	0.6	45	430	0.2
10-2	Th	0850	5.6	14	7	15	-	-	-	6.9	0	15	10	0.5	9.3	90	1.2	45	-	-
Average			5	19	7	25	42	-	-	6.5 to 6.9	0	12	13	1	8.4	90	1.0	35	1,500	0.2

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 20 - Located on Caler Fork Creek to define condition of water below Macon Mining Company and above five ruby mines. (Macon Mining Company not operating) Drainage Area (sq. mi.) 4.13

Date Col. 1958	Day	Time	Dis. cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.	Settleable Solids ml/l
6-13	F	1015	3.8	20	4	50	-	-	-	6.6	0	12	12	0.5	8.2	89	1.0	26	2,400	0.3
7-1	T	1640	3.8	23	5	45	-	-	-	6.8	0	15	11	0	8.0	92	0.8	21	230	-
7-15	T	1310	6.0	22	7	50	63	49	112	6.7	0	14	9	0	7.9	89	1.2	49	-	0.3
7-30	W	1430	5.0	24	10	25	80	42	122	6.8	0	22	16	0.5	7.5	88	1.5	51	2,300	0.3
8-22	F	0830	3.2	19	7	15	45	40	85	6.8	0	20	14	0.5	8.4	90	0.4	9	430	0.5
Average			4.4	22	7	35	63	44	106	6.6 to 6.8	0	17	12	0.5	8.0	90	1.0	31	1,300	.4

Station 20 - Located on Caler Fork Creek to define condition of water below Macon Mining Company and above five ruby mines. (Macon Mining Company operating) Drainage Area (sq. mi.) 4.13

9-22	M	1605	3.8	20	5	4,000	7,752	-	-	6.9	0	11	20	0.5	8.1	88	1.2	31	2,300	40.0
9-24	W	0825	5.3	17	7	600	7,871	-	-	6.8	0	13	16	0.5	9.1	93	0.5	18	430	34.0
9-30	T	0900	11	15	7	1,750	7,116	-	-	6.4	0	14	12	0.5	9.4	93	0.2	15	2,300	36.0
10-2	Th	0900	5.6	14	6	5,500	7,004	-	-	6.5	0	13	10	5	9.3	90	0.7	26	-	-
Average			6	17	6	3,000	7,436	-	-	6.4 to 6.9	0	13	15	2	9.0	91	0.7	23	1,700	36.7

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 21 - Located on Cowee Creek below points of discharge of silt from Macon Mining Company and five ruby mines and above Little Tennessee River. (Macon Mining Company not operating) Drainage Area (sq. mi.) 25

Date Col. 1958	Day	Time	Dis. cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Colif. M.P.N. per 100 ml.	Settleable Solids ml/l
6-13	F	1130	33	20	6	75	-	-	-	6.6	0	10	11	0.5	8.6	94	2.1	470	2,400	0.4
7-1	T	1715	25	22	5	45	-	-	-	6.8	0	15	8	0	8.0	91	0.6	100	430	-
7-15	T	1340	36	21	6	40	43	52	95	6.8	0	13	9	0.5	8.1	90	1.2	290	23,000	0.3
7-30	W	1500	28	22	8	30	79	24	103	6.8	0	20	14	0.5	7.8	88	0.9	170	93,000	0.3
8-22	F	0900	25	19	10	10	26	34	60	6.6	0	15	10	0.5	8.6	92	0.2	34	430	-
Average			29	21	7	40	49	37	86	6.6 to 6.8	0	15	10	0.5	8.2	91	1.0	210	24,000	0.3

Station 21 - Located on Cowee Creek below points of discharge of silt from Macon Mining Company and five ruby mines and above Little Tennessee River. (Macon Mining Company operating) Drainage Area (sq. mi.) 25

9-22	M	1425	24	20	7	450	909	-	-	6.9	0	10	20	0.5	8.1	88	0.9	150	9,300	2.0
9-24	W	0835	22	16	14	180	188	-	-	6.9	0	14	15	0.5	9.1	91	1.0	150	750	0.4
9-30	T	0930	21	15	12	140	-	-	-	6.4	0	13	18	1	9.6	95	1.0	140	4,300	0.4
10-2	Th	0920	29	14	17	260	320	-	-	6.5	0	11	13	0	9.5	92	1.6	310	-	-
Average			24	16	13	260	472	-	-	6.4 to 6.9	0	12	17	1	9.1	92	1.1	190	4,800	0.9

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 22 - Located on Little Tennessee Riverto define condition of water entering Fontana Reservoir. Drainage Area (sq. mi.) 448

Date Collected 1958	Day	Time	Discharge Mean Daily cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-16	M	0915	690	26	6	15	6.2	0	14	7	1	7.0	85	1.4	6,500	23
7-10	Th	0615	1,720	24	5	15	7.5	0	15	12	0.5	7.7	90	2.3	27,000	-
7-17	Th	1130	900	27	4	7	7.4	0	11	10	0	8.0	99	1.7	10,000	93
7-21	M	1500	900	27	10	7	7.4	0	13	8	0.5	7.6	94	1.3	7,900	4,600
8-12	T	1700	650	28	7	15	7.3	0	11	8	0.5	7.5	95	1.7	7,500	430
8-21	Th	1300	480	29	9	10	6.8	0	15	8	0	7.8	100	1.6	5,200	3.6
9-17	W	0840	370	21	12	50	7.1	0	15	10	0	8.1	90	2.0	5,000	4,600
9-30	T	1100	320	17	12	35	6.5	0	14	17	1	9.2	95	1.0	2,200	430
Average			754	25	8	20	6.2 to 7.5	0	14	10	0	7.9	94	1.6	8,900	1,500

Station 23 - Located on Nantahala River in tailrace from Nantahala Power Plant. Drainage Area (sq. mi.) 133

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-16	M	1115	537	10	4	20	6.2	0	6	6	1	9.9	87	0.5	1,800	43
7-10	Th	0800	537	11	5	15	6.6	0	10	12	0	9.5	85	0.7	2,500	-
7-17	Th	1320	539	13	3	3	6.5	0	9	5	0	9.1	86	0.8	2,900	150
7-21	M	1650	540	14	7	7	6.6	0	8	5	0	8.9	86	-	-	230
8-21	Th	1330	0*	21*	9*	15*	6.6*	0*	10*	8*	0*	8.1*	90*	0.7*	-	23*
9-17	W	0925	548	16	5	15	6.5	0	9	5	0.5	6.7	67	0.9	3,300	150
Average			540	13	5	10	6.2 to 6.6	0	8	7	0	8.8	82	0.7	2,600	140

* Excluded from average - power plant shut down.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 23-A - Located on Queens Creek below tailrace from Queens Power House.

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. as $CaCO_3$ ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D.O. ppm	D.O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Colif. M.P.N. per 100 ml.	Settleable Solids ml/l
6-16	M	1145	13.5	17	7	20	-	-	-	6.3	0	10	8	0.5	8.6	88	0.7	64	3.6	-
7-10	Th	0815	22.0	18	5	20	-	-	-	7.0	0	15	14	0.5	8.8	92	1.2	180	-	-
7-17	Th	1335	13.5	19	5	-	-	-	-	7.0	0	11	10	0	8.2	88	1.3	120	930	-
7-21	M	1705	13.5	20	14	10	-	-	-	7.2	0	18	11	0.5	7.8	85	0.9	82	2,400	-
8-21	Th	1345	0*	21*	10*	9*	-	-	-	6.5*	0*	50*	10*	0*	8.0*	89*	0.8*	-	75*	-
9-17	W	0930	13.5	20	9	9	-	-	-	6.7	0	12	10	0.5	8.5	93	0.5	46	930	-
Average			15.2	19	8	15	-	-	-	6.3 to 7.2	0	13	11	0	8.4	89	0.9	98	1,100	-

* Excluded from average - power plant shut down.

Station 24 - Located on Nantahala River below Nantahala Power Plant and Queens Creek Power Plant and above Nantahala Limestone & Talc Company. Drainage Area (sq. mi.) 144

6-16	M	1030	634	16	5	25	-	-	-	6.2	0	8	11	1	9.5	96	1.5	6,400	430	0.2
7-10	Th	0740	700	12	4	9	21	12	33	6.8	0	11	9	0	9.9	84	1.1	5,200	-	0.1
7-17	Th	1250	647	15	3	-	-	-	-	6.8	0	8	7	0	9.9	98	0.5	2,200	430	Trace
7-21	M	1620	660	16	9	10	22	26	48	6.8	0	11	10	0	9.1	91	1.1	4,900	430	-
8-12	T	1300	85	22	8	15	20	29	49	7.0	0	12	11	0	8.0	91	1.6	920	4,600	-
8-21	Th	1400	59	21	7	9	4	23	27	6.6	0	10	8	0	9.1	101	1.1	440	43	-
9-17	W	1000	614	17	6	15	0	20	20	6.6	0	10	5	0.5	9.3	95	0.3	1,200	430	-
Average			486	17	6	15	13	22	35	6.2 to 7.0	0	10	9	0	9.3	94	1.0	3,000	1,100	-

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 25 - Located on Nantahala River below the point of discharge of mining waste from Nantahala Limestone & Talc Company near Nantahala. Drainage Area (sq. mi.) 147

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day ppm 20°C	B.O.D. lbs/day 25°C	Colif. M.P.N. per 100 ml.	Settleable Solids ml/l
6-16	M	1015	635	16	5	20	-	-	-	6.1	0	14	14	0	9.4	95	1.0	4,300	93	0
7-10	Th	0715	710	12	4	10	39	40	79	7.0	0	18	16	0	9.5	87	1.8	8,600	-	0.1
7-17	Th	1230	650	15	5	3	19	38	57	6.9	0	11	11	0	9.7	96	0.7	3,100	150	trace
7-21	M	1600	110	15	9	9	11	46	57	6.9	0	17	14	0	8.8	87	0.4	300	75	-
8-12	T	1330	80	22	10	40	38	54	92	8.3	0	22	20	0	7.9	89	2.4	1,300	11,000	-
8-21	Th	1415	60	20	6	15	26	28	54	6.6	0	50	13	0	9.0	98	0.9	360	23	0
9-17	W	1030	615	18	5	10	37	67	104	6.6	0	10	8	0.5	9.3	97	0.4	1,700	230	0.1
Average			409	17	6	15	28	46	74	6.1 to 8.3	0	20	14	0	9.1	93	1.1	2,800	1,900	0 Usually

Station 26 - Located on Tuckasegee River below the Hydro-Electric dams at Glenville Lake. Drainage Area (sq. mi.) 55.3

6-17	T	1030	165	11	5	35	-	-	-	6.2	0	8	7	0.5	10.1	91	1.2	1,300	93	-
7-9	W	1230	203	15	18	25	-	-	-	6.8	0	11	9	1	8.8	87	1.9	2,600	>1,100*	-
7-18	F	0700	270	13	7	3	-	-	-	6.5	0	6	8	0.5	9.6	91	0.7	1,300	93	-
8-11	M	1510	270	17	12	15	-	-	-	6.8	0	9	7	0	8.2	84	0.7	1,300	23	-
8-26	T	1920	88	21	35	75	-	-	-	6.9	0	12	9	0.5	7.8	87	4.8	2,900	930	-
Average			199	15	15	30	-	-	-	6.2 to 6.9	0	9	8	1	8.9	88	1.9	1,900	280	-

* Indeterminate - excluded from average

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 27 - Located on the East Fork of Tuckasegee River below Cedar Cliffs Dam and above its confluence with the Tuckasegee River. Drainage Area (sq. mi.) 83.4

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	O. % Sat.	5-Day ppm 20°C	B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-17	T	1100	-	14	12	40	6.5	0	9	6	0.5	8.5	82	0.7	-	<3.6*
7-9	W	1300	-	15	8	15	6.4	0	10	10	1	8.1	80	0.7	-	460
7-18	F	0730	-	15	14	9	6.6	0	8	9	0	8.6	85	0.5	-	230
8-11	M	1500	-	16	13	20	6.5	0	7	7	0.5	6.9	69	0.6	-	3.6
8-26	T	1930	-	20	20	25	6.9	0	13	9	0.5	7.5	82	1.6	-	230
Average			-	16	13	20	6.4 to 6.9	0	9	8	1	7.9	80	0.8	-	230

Note: Stream too highly regulated to obtain accurate flows.

* Indeterminate - excluded from average.

Station 28 - Located on the Tuckasegee River below confluence with East Fork of Tuckasegee River. Drainage Area (sq. mi.) 143

6-17	T	1200	684	15	11	20	6.5	0	8	6	0.5	9.3	92	0.8	3,700	43
7-9	W	1345	317	15	14	35	6.5	0	9	10	1	8.9	88	1.1	2,400	1,100
7-18	F	0755	272	14	7	7	6.8	0	8	6	0.5	9.5	92	0.6	1,100	430
8-11	M	1540	752	17	12	20	6.3	0	8	5	0.5	7.8	80	0.8	4,100	150
8-26	T	1940	135	20	13	20	6.6	0	9	8	0	8.0	87	3.1	2,800	430
Average			432	16	11	20	6.3 to 6.8	0	8	7	1	8.7	88	1.3	2,800	430

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 29 - Located on Tuckasegee River to define condition of water above Cullowhee. Drainage Area (sq. mi.) 207

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-18	W	1015	345	15	4	7	6.8	0	10	6	1	9.8	97	0.7	1,600	1,500
7-9	W	1410	-	16**	11**	15**	6.6**	0**	9**	8**	1**	9.4**	94**	0.7**	-	930**
7-18	F	0815	345	16	12	5	6.7	0	8	6	0	9.1	91	0.9	2,100	930
8-6	W	1420	310	20	-	10	6.7	0	10	6	0	8.8	96	1.2	2,500	2,300
8-11	M	1400	870	22	12	15	6.8	0	10	8	0.5	8.4	95	1.4	8,200	930
8-26	T	1610	345	22	18	40	6.9	0	10	7	0.5	8.0	91	1.6	3,700	430
9-26	F	0720	280	18	16	5	6.8	0	10	5	0.5	8.8	92	0.5	950	230
10-2	Th	1130	125	15	21	20	6.0	0	9	7	1	8.9	88	0.7	590	4,600
Average			374	18	14	15	6.0 to 6.9	0	10	6	1	8.8	93	1.0	2,800	1,600

** Excluded from average-flow undetermined

Station 29-A - Located above all pollution in Cullowhee Creek. Drainage Area (sq. mi.) 6.90

8-6	W	1205	6.6	18	-	20	6.8	0	10	8	0	8.4	88	1.0	45	9,300
8-11	M	1030	6.8	19	8	20	6.9	0	10	7	1	8.5	91	1.4	64	230
8-26	T	1625	6.6	20	11	30	7.0	0	10	7	0	8.2	89	0.9	40	930
9-26	F	0745	5.3	17	8	9	6.7	0	11	6	0.5	9.1	93	0.8	29	93
10-2	Th	1200	6.4	13	15	35	6.5	0	11	11	1	9.9	93	0.5	22	> 11,000*
Average			6.3	17	11	25	6.5 to 7.0	0	10	8	1	8.8	91	0.9	40	2,600

* Indeterminate - excluded from average.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 29-B - Located above all known pollution in Tilly Creek from private outfall. Drainage Area (sq. mi.) 6.02

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day ppm 20°C	B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
8-6	W	1145	8.8	22	-	15	7.0	0	19	17	0	8.0	91	1.3	77	9,300
8-11	M	0955	7.8	23	4	30	7.3	0	17	12	2	7.9	91	0.9	47	93
8-26	T	1640	5.0	23	6	25	7.2	0	17	13	0.5	7.7	89	2.0	68	750
9-26	F	0800	4.2	18	6	10	6.8	0	10	16	0.5	9.1	95	0.6	17	930
10-2	Th	1240	7.4	15	7	35	6.7	0	17	8	0.5	9.3	92	0.8	40	> 11,000*
Average			6.6	20	6	25	6.7 to 7.3	0	16	13	1	8.4	92	1.1	50	2,800

* Indeterminate - excluded from average.

Station 29-C - Located on Cullowhee Creek below confluence with Tilly Creek to define quality of water. Drainage Area (sq. mi.) 18.3

8-6	W	1245	19	21	-	15	6.7	0	19	13	0	8.2	91	1.6	210	23,000
8-11	M	0930	20	21	8	25	7.1	0	15	12	1	8.3	92	1.1	150	430
8-26	T	1655	20	23	12	15	7.1	0	15	14	0.5	7.7	89	2.1	280	930
9-26	F	0820	15	18	8	9	6.8	0	10	12	0.5	8.8	92	1.1	110	930
10-2	Th	1250	23	14	9	40	6.6	0	16	12	1	9.4	91	0.8	120	> 11,000*
Average			19	19	9	20	6.6 to 7.1	0	15	13	1	8.5	91	1.3	170	6,300

* Indeterminate - excluded from average.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 30 - Located on Cullowhee Creek above the point of discharge of Western Carolina College's sewage treatment plant and below untreated sewage from several private outfalls. Drainage Area (sq. mi.) 23

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-18	W	1045	30	17	4	15	6.5	0	10	2	1	8.3	85	1.0	200	9,300
7-9	W	1450	48	19	11	30	6.8	0	15	13	0.5	8.3	89	1.2	390	24,000
7-18	F	0850	26	18	14	15	7.1	0	11	13	0.5	8.2	86	0.5	88	46,000
8-6	W	1300	19	21	-	15	6.8	0	13	13	0	8.1	90	1.5	190	23,000
8-11	M	1140	20	22	9	30	7.3	0	18	11	1	8.1	92	1.8	240	240,000
8-26	T	1715	21	23	12	30	7.3	0	16	11	0	7.6	88	1.5	210	930
9-26	F	0900	15	18	8	10	6.8	0	16	12	1	8.7	91	1.0	100	430
10-2	Th	1315	23	14	8	30	6.4	0	12	14	1	9.5	92	0.5	78	15,000
Average			25	19	9	22	6.4 to 7.3	0	14	11	1	8.4	89	1.1	190	45,000

Station 31 - Located on Flat Branch to define quality of water supply at Western Carolina College. Drainage Area (sq. mi.) .06

7-9	W	1115	-	18	7	10	6.8	0	12	20	0.5	8.8	92	0.8	-	93
7-18	F	0920	-	23	6	7	7.0	0	12	7	0	8.1	93	-	-	230
8-6	W	1340	-	22	-	15	6.6	0	14	13	0	7.7	87	0.6	-	3.6
8-11	M	1100	-	19	7	10	6.9	0	11	9	1	8.4	90	0.9	-	<3.6*
8-26	T	1515	-	20	6	25	7.1	0	13	11	0	8.4	92	0.8	-	43
Average			-	20	7	15	6.6 to 7.0	0	12	12	0	8.3	91	0.8	-	92

* Indeterminate - excluded from average.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 32 - Located on Long Branch to define the quality of water supply at Western Carolina College. Drainage Area (sq. mi.) .28

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
7-9	W	1015	-	21	16	30	6.9	0	15	12	1	8.1	90	0.8	-	28
7-18	F	0940	-	18	11	7	6.9	0	11	10	0	8.2	86	0.1	-	36
8-6	W	1230	-	18	-	10	6.7	0	10	10	0	8.5	89	0.9	-	91
8-11	M	1310	-	23	11	15	7.1	0	11	10	1	7.8	90	0.7	-	<36*
8-26	T	1500	-	22	8	150	7.3	0	13	7	0.5	8.0	91	0.8	-	93
Average			-	20	12	40	6.7 to 7.3	0	12	10	1	8.1	89	0.7	-	62

* Indeterminate - excluded from average.

Station 32-A - Located on Long Branch above all but three private outfalls. Drainage Area (sq. mi.) .44

8-6	W	1105	0.77	20	-	-	-	-	-	-	-	8.1	88	1.4	7	46,000
8-26	T	1755	0.72	21	13	30	7.1	0	18	13	0.5	8.1	90	0.9	4	2,300
9-26	F	0845	0.77	18	9	15	6.5	0	18	14	0	8.7	91	0.8	4	23
10-2	Th	1300	0.93	15	8	40	6.5	0	16	16	1	9.4	93	0.5	3	4,600
Average			0.80	19	10	30	6.5 to 7.1	0	17	14	1	8.6	91	0.9	5	13,000

Station 33 - Located on Cullowhee Creek 100' below point of effluent discharge from Western Carolina College Sewage Treatment Plant. Drainage Area (sq. mi.) 23

6-18	W	1230	26	19	5	15	6.9	0	14	9	2	8.5	91	2.5	440	23,000
7-9	W	1530	35	20	12	15	6.8	0	15	17	1	7.9	86	1.0	240	9,300
7-18	F	1030	21	19	16	15	7.1	0	11	13	0.5	8.3	89	0.7	99	15,000
8-6	W	1320	21	21	-	7	6.8	0	17	16	0.5	8.0	89	1.8	260	23,000
8-11	M	1230	21	22	11	15	6.8	0	15	11	2	8.0	91	2.9	410	43,000
8-26	T	1825	20	23	13	40	7.2	0	17	12	1	7.5	86	1.3	180	9,300
9-26	F	0915	19	19	9	7	6.8	0	20	15	2	8.5	91	1.1	140	43,000
10-2	Th	1330	24	15	8	30	6.6	0	18	10	0.5	9.0	89	1.0	160	9,300
Average			23	20	11	20	6.6 to 7.2	0	16	13	1	8.2	89	1.5	240	22,000

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 34 - Located on Cullowhee Creek below all pollution from Cullowhee and above Tuckasegee River. Drainage Area (sq. mi.) 23.4

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-18	W	1330	27	20	5	20	6.9	0	14	11	1	8.3	91	1.2	220	93,000
7-9	W	1555	36	19	10	20	7.0	0	17	14	0.5	8.1	87	1.4	340	43,000
7-18	F	1120	30	19	16	20	7.0	0	11	12	0.5	8.2	88	0.8	160	23,000
8-6	W	1400	22	21	-	15	6.7	0	15	14	0.5	8.0	89	3.6	530	93,000
8-11	M	1320	22	22	12	25	6.7	0	13	12	2	8.0	91	1.3	190	23,000
8-26	T	1845	21	23	14	25	7.3	0	18	14	0.5	7.7	89	1.5	210	43,000
9-26	F	0930	20	18	9	9	6.8	0	14	14	1	8.7	91	1.2	160	93,000
10-2	Th	1145	25	14	10	35	6.6	0	17	15	1	9.4	91	1.1	190	43,000
Average			25	20	11	20	6.6 to 7.3	0	15	13	1	8.3	90	1.5	250	57,000

Station 35 - Located on Tuckasegee River below all pollution from Cullowhee. Drainage Area (sq. mi.) 231

6-18	W	1300	950	16	4	20	6.5	0	9	7	1	9.6	97	0.5	3,200	1,400
7-9	W	1635	560	17	13	15	6.7	0	9	12	1	9.1	93	1.2	4,500	4,600
7-18	F	1200	375	16	19	9	6.9	0	9	7	0	9.2	92	0.8	2,000	15,000
8-6	W	1435	330	19	-	15	6.7	0	12	18	0	8.9	95	1.0	2,200	2,300
8-11	M	1335	900	21	13	20	6.8	0	8	8	2	8.5	95	0.7	4,300	430
8-26	T	1900	285	22	16	25	7.0	0	8	7	0	8.1	92	0.6	1,200	930
9-26	F	0945	320	19	13	5	6.7	0	11	6	0.5	8.7	93	0.7	1,500	2,300
10-2	Th	1125	165	15	12	40	6.5	0	12	12	1	9.6	95	0.9	1,000	7,500
Average			486	18	13	20	6.5 to 7.0	0	10	10	1	9.0	94	0.8	2,500	4,300

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 36 - Located on Tuckasegee River 200' above all pollution in Scott Creek. Drainage Area (sq. mi.) 288

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.	Settleable Solids ml/l
6-19	Th	1045	295	17	7	10	6.6	0	10	10	1	9.2	95	1.8	3,600	9,300	-
7-2	W	0800	435	17	9	15	7.5	0	14	11	0.5	8.3	85	2.9	8,500	430	0
7-7	M	1230	250	20	15	15	7.0	0	16	6	0.5	8.9	97	1.5	2,500	15,000	-
7-16	W	0740	475	17	10	15	7.5	0	17	7	0	8.9	91	3.0	9,600	930	-
7-22	T	1040	515	18	16	60	6.7	0	10	7	0.5	8.5	89	1.9	6,600	-	-
7-31	Th	0540	405	19	7	20	6.8	0	10	10	0.5	8.0	86	1.3	3,600	7,500	0.1
8-8	F	0145	415	18	-	35	6.6	0	12	8	0	7.9	83	0.8	2,200	110,000	-
8-13	W	1155	170	21	16	20	6.6	0	9	8	0	8.5	95	2.0	2,300	4,300	0.2
8-20	W	1100	390	20	9	15	6.8	0	3	7	0.5	8.5	93	1.9	5,000	2,300	0.2
8-27	W	1200	225	22	17	15	6.8	0	10	8	0.5	8.6	97	2.9	4,400	4,300	0.3
9-11	Th	1525	130	21	16	15	6.6	0	11	11	0	8.2	91	1.4	1,200	9,300	trace
9-18	Th	1025	245	21	14	7	6.8	0	11	10	0.5	8.1	90	1.8	3,000	4,300	0.2
Average			329	19	12	20	6.6 to 7.5	0	11	9	0	8.5	91	1.9	4,400	15,000	0.2

Station 37 - Located on Fisher Creek above the raw water intake of the Town of Sylva. Drainage Area (sq. mi.) .65

6-17	T	1730	-	19	2	20	6.6	0	8	4	0.5	8.3	89	0.4	-	<3.6	-
7-3	Th	1255	-	16	2	9	6.6	0	8	5	0.5	8.8	88	1.1	-	<3.6	-
8-25	M	1840	-	18	4	15	6.9	0	2	5	0.5	8.5	89	0.8	-	<3.6	-
Average			-	18	3	15	6.6 to 6.9	0	6	5	1	8.5	89	0.8	-	<3.6	-

Station 38 - Located on Dills Creek above the raw water intake of the Town of Sylva. Drainage Area (sq. mi.) .69

6-17	T	1700	-	20	5	30	6.2	0	6	7	0.5	8.3	91	0.9	-	<3.6	-
7-3	Th	1040	-	20	3	15	6.6	0	8	6	0.5	8.1	88	1.4	-	3.6	-
8-25	M	1400	-	16	-	-	-	-	-	-	-	8.1	81	-	-	<3.6	-
Average			-	19	-	-	6.2 to 6.6	0	-	-	-	8.2	87	-	-	<3.6	-

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 38-A - Located on Scotts Creek above gravel washing operation. Drainage Area (sq. mi.) 37.6

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. as $CaCO_3$ ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.	Settleable Solids ml/l
7-31	Th	0445	54	17	8	15	-	-	-	7.0	0	10	9	0.5	8.4	86	0.9	330	2,300	0.1
8-6	W	1520	47	22	-	7	26	44	70	6.8	0	15	9	0.5	8.0	91	1.3	410	9,300	-
8-8	F	0005	60	19	-	110	-	-	-	6.7	0	12	9	0	8.0	86	0.8	320	24,000	1.0
8-13	W	1050	50	20	6	15	62	98	160	7.0	0	14	11	0	8.3	91	1.0	340	9,300	0.2
8-20	W	0800	47	17	7	15	47	26	73	7.0	0	5	10	0	9.5	98	1.3	410	43,000	0.2
8-27	W	0900	46	18	10	50	34	41	75	7.3	0	12	9	0.5	8.9	93	1.0	310	1,500	0.1
9-11	Th	1200	32	18	10	20	94	19	113	7.1	0	12	10	0.5	9.0	94	1.6	350	9,300	0.1
9-18	Th	0700	33	18	7	15	-	-	-	7.0	0	14	13	0.5	8.7	91	1.0	220	24,000	0.3
Average			46	19	8	30	53	46	98	6.7 to 7.3	0	12	10	0	8.6	91	1.1	340	15,000	0.3

Station 39 - Located on Scott Creek above all sources of pollution from Sylva. Drainage Area (sq. mi.) 48.0

6-19	Th	1100	61	16	80	560	-	-	-	6.7	0	11	10	0.5	8.9	90	-	-	23,000	-
7-2	W	0820	45	16	9	20	-	-	-	7.2	0	15	11	1	9.2	92	1.6	490	9,300	-
7-7	M	1120	58	20	200	300	-	-	-	7.0	0	16	6	1	8.3	91	2.2	860	9,300	-
7-22	T	0825	75	18	7	25	-	-	-	6.9	0	12	9	0	8.4	88	1.8	910	-	-
7-31	Th	0430	66	18	17	35	-	-	-	7.1	0	15	11	2	8.4	88	3.3	1,500	9,300	0.3
8-6	W	1500	57	23	-	90	379	39	418	6.7	0	13	8	0	7.6	88	1.6	620	15,000	-
8-8	F	2400	78	19	-	220	-	-	-	6.9	0	14	11	0	8.0	86	0.3	160	24,000	1.5
8-13	W	1035	58	21	75	120	1,431	112	1,543	6.9	0	16	-	2	7.6	85	2.3	900	9,300	3.0
8-20	W	0830	51	17	34	80	393	95	488	6.9	0	4	8	0	8.5	87	1.5	520	15,000	3.2
8-27	W	0930	51	18	9	75	42	35	77	6.9	0	13	10	0.5	8.8	92	0.7	240	15,000	0.3
9-11	Th	1220	37	19	8	9	14	39	53	7.0	0	15	9	0.5	9.1	97	1.3	320	23,000	0.4
9-18	Th	0720	35	18	8	15	-	-	-	7.0	0	14	14	0.5	8.8	92	1.8	430	43,000	-
Average			56	19	45	190	452	64	516	6.7 to 7.2	0	13	10	1	8.5	90	1.7	630	18,000	1.5

Note: This sampling station is located below gravel washing operation.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 40 - Located on Scott Creek below points of discharge of untreated sewage from several private outfalls in Sylva and above five outfalls discharging untreated sewage and industrial waste from the Mead Corporation, Sylva Division. Drainage Area (sq. mi.) 50.7

Date Col. 1958	Day	Time	Dis. cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. as $CaCO_3$ ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Colif. M.P.N. per 100 ml.	Settleable Solids ml/l	Sulfide ppm	Sulphate ppm
6-19	Th	1115	65	17	120	600	-	-	-	6.5	0	10	24	1	8.8	91	-	-	43,000	2.1	-	-
7-2	W	0840	48	16	8	20	-	-	-	7.1	0	13	11	2	9.1	91	3.9	1,300	4,300	0.4	-	-
7-7	M	1140	61	20	260	300	-	-	-	6.9	0	15	7	1	8.4	92	1.0	410	75,000	3.0	0	103
7-16	W	0600	98	18	6	25	38	79	117	7.1	0	15	8	0	8.7	91	1.4	930	9,300	0.8	0	12
7-22	T	0845	91	18	8	30	72	31	103	6.8	0	12	12	0	8.4	88	1.6	980	-	0.6	0	14
7-31	Th	0345	68	18	12	40	88	619	707	6.8	0	12	9	1	8.2	86	1.0	460	9,300	0.2	0	50
8-8	F	0010	84	19	-	120	594	91	685	7.0	0	14	11	0	8.2	88	1.0	570	110,000	2.0	0	60
8-13	W	0945	61	20	8	25	-	-	-	6.9	0	12	10	0.5	8.3	91	0.7	290	23,000	0.2	0	60
8-20	W	0900	54	18	5	25	150	45	195	6.8	0	5	13	1	8.8	92	1.5	550	43,000	0.4	0	50
8-27	W	1000	58	19	13	60	74	50	124	6.8	0	14	13	0	8.7	93	2.5	980	9,300	0.2	0	70
9-11	Th	1240	39	20	7	9	30	55	85	7.0	0	13	12	0.5	8.7	95	1.5	390	43,000	0.3	0	13
9-18	Th	0740	39	18	70	15	30	206	236	6.9	0	13	11	0	8.8	92	0.7	180	93,000	0.2	0	19
Average			64	18	47	110	135	147	282	6.5 to 7.1	0	12	12	1	8.6	91	1.5	640	42,000	0.9	0	45

Station 41 - Located on Scott Creek below all pollution from the Mead Corporation, Sylva Division, and several private outfalls. Drainage Area (sq. mi.) 55.0

6-19	Th	1215	80	20	360	700	-	-	-	7.7	0	65	18	6	1.3	14	120	66,000	23,000	1.1	0	-
7-2	W	0905	70	18	260	130	219	508	727	8.1	0	72	11	1.5	0.0	0	180	85,000	4,300	0.9	0	-

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 42 - Located on Scott Creek below all pollution from the Mead Corporation, Sylva Division, and several private outfalls and above the discharge of untreated sewage from four Sylva outfalls. (Located 0.34 of a mile below last Mead outfall.) Drainage Area (sq. mi.) 55.2

Date Col. 1958	Day	Time	Dis. cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Colif. M.P.N. per 100 ml.	Settleable Solids ml/l	Sulfide ppm	Sulphate ppm	Sulfite ppm
6-19	Th	1230	89	20	500	800	-	-	-	8.2	0	123	18	5	0	0	120	72,000	43,000	1.3	0	-	-
7-2	W	0910	71	18	480	130	229	1,063	1,292	8.2	0	125	11	2	0	0	280	130,000	230,000	2.0	0	-	-
7-7	M	1200	75*	21*	55*	100*	291*	82*	373*	7.1*	0*	16*	14*	1*	8.1*	90*	1.5*	760*	93,000*	-	0*	-	-
7-16	W	0610	109	19	240	50	96	504	600	8.2	0	74	16	4	-	-	110	81,000	9,300	1.6	0	14	-
7-22	T	0910	108	20	100	30	0	303	303	7.2	0	37	11	0	6.2	68	90	66,000	-	0.7	0	14	6.3
7-31	Th	0410	84	20	560	30	82	2,296	2,378	7.9	0	170	10	2	0	0	360	200,000	43,000	3.5	0	170	-
8-8	F	0040	88	19	-	200	1,376	596	1,972	7.6	0	55	20	395	0	0	69	41,000	43,000	2.0	0	18	9.5
8-13	W	1010	77	24	260	30	234	275	509	7.5	0	65	24	3	-	-	120	62,000	230,000	1.5	0	40	-
8-20	W	0925	70	20	240	100	138	493	631	7.4	0	16	16	0	3.2	35	96	45,000	150,000	1.6	0	40	-
8-27	W	1030	70	21	400	35	127	676	803	8.3	0	133	36	20	0.0	0	190	90,000	43,000	1.6	0	200	-
9-11	Th	1330	54	20	500	28	91	850	941	8.1	0	116	16	-	0	0	180	66,000	43,000	0.7	0	-	-
9-18	Th	0830	51	21	500	20	142	615	757	7.6	0	84	14	5	0	0	190	65,000	93,000	2.0	0	-	-
Average			79	20	380	130	252	767	1,019	7.1 to 8.3	0	91	17	44	1.0	11	160	83,000	93,000	1.7	0	71	-

*Excluded from average. Shows condition of creek after no waste discharge from Mead for four days.

Station 43 - Located on Scott Creek below all pollution from Sylva area. Drainage Area (sq. mi.) 57

6-19	Th	1330	86	20	600	800	-	-	-	7.9	0	133	14	5	0	0	100	58,000	430,000	1.4	0	-	-
7-2	W	0915	72	20	550	130	135	1,092	1,227	8.0	0	141	12	0.5	0	0	290	140,000	43,000	2.0	0	-	-
8-20	W	0945	65	20	-	-	-	-	-	-	-	-	-	-	1.3	14	-	-	-	-	-	-	-
8-27	W	1045	67	21	-	-	-	-	-	-	-	-	-	-	0.0	0	-	-	-	-	-	-	-
9-11	Th	1400	52	20	-	-	-	-	-	-	-	-	-	-	0.0	0	-	-	-	-	-	-	-
9-18	Th	0900	51	21	-	-	-	-	-	-	-	-	-	-	0.0	0	-	-	-	-	-	-	-
Average			66	20	-	-	-	-	-	7.9 to 8.0	-	-	-	-	0.2	2	-	-	-	-	-	-	-

Note: This station located 0.84 of a mile below last Mead outfall.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 44 - Located on Scott Creek below all pollution from the Sylva area to help define sag point. (Located 1.94 miles below last Mead outfall.) Drainage Area (sq. mi.) 58.6

Date Col. 1958	Day	Time	Dis. cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. as $CaCO_3$ ppm	Hardness ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Colif. M.P.N. per 100 ml	Settleable Solids ml/l	Sulfide ppm	Sulphate ppm	Sulfite ppm
6-19	Th	1340	84	20	240	900	-	-	-	7.4	0	52	10	2	3.1	34	36	20,000	23,000	1.8	0	-	-
7-2	W	0920	74	-	260	240	163	529	692	7.6	0	71	12	2	0.0	0	140	70,000	43,000	1.5	0	-	-
7-7	M	1210	71*	21*	37*	75*	257*	65*	322*	7.0*	0*	17*	14*	1*	7.8*	87*	2.4*	1,200*	23,000*	1.0*	0*	-	-
7-16	W	0700	110	20	280	6	63	1,230	1,293	8.3	0	167	20	16	0.0	0	360	270,000	43,000	1.4	0	63	-
7-22	T	1000	104	20	55	35	129	71	200	7.0	0	23	12	0	6.8	74	57	40,000	-	1.1	0	-	-
7-31	Th	0500	74	20	320	30	111	648	759	7.8	0	96	11	2	0.0	0	130	65,000	43,000	5.0	0	70	-
8-8	F	0130	83	19	-	250	753	521	1,274	7.7	0	74	20	295	0.6	6	110	62,000	23,000	2.0	0	26	-
8-13	W	1120	65	23	260	30	69	574	643	7.5	0	74	20	4	0.5	6	100	44,000	93,000	1.3	0	60	-
8-20	W	1015	59	21	380	160	122	700	822	7.4	0	26	12	0	0.0	0	130	52,000	93,000	1.6	-	24	31.6
8-27	W	1115	64	21	320	25	88	798	886	7.3	0	86	12	4	0.0	0	160	69,000	93,000	3.5	0	80	-
9-11	Th	1435	51	23	1,000	50	94	2,150	2,244	8.1	0	271	20	-	0.0	0	370	130,000	93,000	2.0	0	40	-
9-18	Th	0935	51	21	900	50	117	1,704	1,821	7.5	0	216	16	8	0.0	0	500	170,000	930,000	2.5	0	-	-
Average			74	21	400	160	171	893	1,063	7.0 to 8.3	0	105	15	33	1.0	11	190	90,000	150,000	2.2	0	52	-

*Excluded from average. Shows condition of creek after no Mead waste discharge for four days.

TABLE 9
ANALYTICAL RESULTS
LITTLE TENNESSEE RIVER BASIN

Station 45 - Located on Scotts Creek below all pollution from the Sylva area and three outfalls discharging untreated sewage from Dillsboro. (Located 2.44 miles below last Mead outfall and 0.1 of a mile above Tuckasegee River.)

Drainage Area (sq.mi.) 58.6

Date Col. 1958	Day	Time	Dis. cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. 20°C ppm	B.O.D. lbs/day 25°C	Colif. M.P.N. per 100 ml.	Settleable Solids ml/l	Phenol ppm	Sulfite ppm	Sulfide ppm	Sul-Sul. phide ppm
6-19	Th	1400	84	20	240	800	1,075	283	1,358	7.2	0	65	11	2	2.2	24	47	27,000	93,000	1.9	-	-	0	-
7-2	W	0925	74	20	330	200	126	672	798	7.6	0	98	11	2	1.0	9	190	95,000	430,000	3.0	-	-	0	26
7-7	M	1215	71*	21*	70*	65*	454*	52*	506*	7.1*	0*	17*	13*	1*	7.8*	87*	3.3*	1,600*	43,000*	0.9*	-	-	0*	28*
7-16	W	0730	110	19	660	14	98	1,045	1,143	8.3	0	156	20	21	0.0	0	310	230,000	43,000	1.1	0	-	0	69
7-22	T	1030	104	20	85	35	280	42	322	7.0	0	32	13	0	6.5	71	69	48,000	-	1.6	0	1.2	0	17
7-31	Th	0530	74	20	460	30	117	835	952	7.7	0	109	11	2	0.0	0	220	110,000	7,500	6.0	-	-	0	120
8-8	F	0200	83	19	-	250	754	561	1,315	7.6	0	67	20	295	5.3	57	110	62,000	240,000	2.0	-	-	0	20
8-13	W	1140	65	23	260	20	94	555	649	7.5	0	88	18	3	0.0	0	120	53,000	230,000	2.0	-	-	0	30
8-20	W	1045	59	22	450	120	112	779	891	7.5	0	26	16	2	0.0	0	180	72,000	43,000	3.5	-	-	0	110
8-27	W	1145	64	22	300	30	136	787	923	7.4	0	92	20	8	0.0	0	150	65,000	1,100,000	2.0	-	20.5	0	37
9-11	Th	1510	51	23	1,000	70	101	2,011	2,112	8.1	0	280	20	-	0.0	0	350	120,000	43,000	2.5	-	-	0	60
9-18	Th	1010	51	22	840	50	112	1,712	1,824	7.6	0	205	16	8	0.0	0	540	190,000	430,000	2.5	-	-	0	20
Average			74	21	460	150	273	844	1,100	7.0 to 8.3	0	111	16	34	1.4	15	210	97,000	270,000	2.6	-	-	0	51

*Excluded from average. Shows condition of creek after no waste discharge from Mead for four days.

Station 45-A - Located on Tuckasegee River 0.6 mile below Scott Creek.

Drainage Area (sq. mi.) 347

7-16	W	0805	598	18																			4.0	42
7-22	T	1105	645	18																			7.1	74
7-31	Th	0605	509	19																			2.8	30
8-8	F	0235	515	18																			4.2	44
8-13	W	1215	287	22																			0.9	10
8-20	W	1120	457	21																			2.0	22
8-27	W	1220	283	22																			3.0	34
9-11	Th	1555	183**	21**																			1.5**	17**
9-18	Th	1055	279	21																			0.0	0
Average			447	20																			3.0	32

** Excluded from average - discharge indeterminate due to timing of controlled release from upstream dams.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 45-B - Located on Tuckasegee River 1.6 miles below Scott Creek. Drainage Area (sq. mi.) 348

Date Col. 1958	Day	Time	Dis. cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. as $CaCO_3$ ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Colif. M.P.N. per 100 ml.	Sulfide ppm	Sulphate ppm	Settleable Solids ml/l
7-16	W	0845	600	18	110	9	-	-	-	7.2	0	37	8	3	5.6	59	52	210,000	2,100	-	-	-
7-22	T	1145	645	19	26	70	110	10	120	6.6	0	11	10	0	8.0	86	10	44,000	-	0	13	-
7-31	Th	0645	510	19	80	10	-	-	-	7.2	0	31	10	2	5.3	57	42	140,000	9,300	-	-	-
8-8	F	0315	515	18	-	70	-	-	-	7.4	0	32	100	0	5.5	58	27	94,000	-	-	-	-
8-13	W	1250	295	22	110	10	-	-	-	7.3	0	15	13	0.5	3.8	43	51	100,000	430,000	-	-	0.4
8-20	W	1200	455	22	110	10	-	-	-	7.2	0	9	8	0.5	4.4	50	42	130,000	43,000	-	-	-
8-27	W	1300	285	23	95	20	-	-	-	7.2	0	29	9	0.5	4.9	56	29	56,000	43,000	-	-	-
9-11	Th	1650	930*	21*	170*	10*	-	-	-	7.6*	0*	63*	12*	0.5*	2.0*	22*	53*	330,000*	43,000*	-	-	-
9-18	Th	1150	240	22	120	10	-	-	-	7.1	0	35	9	0.5	2.8	32	52	84,000	230,000	-	-	-
Average			443	20	95	25	-	-	-	6.6 to 7.6	0	25	21	1	5.0	55	38	110,000	130,000	-	-	-

* Excluded from average. - Discharge indeterminate due to timing of controlled release from upstream dams.

Station 45-C - Located on Tuckasegee River 2.7 miles below Scott Creek. Drainage Area (sq. mi.) 350

7-16	W	1000	600	19	6.2	66
7-22	T	1300	650	19	8.1	87
7-31	Th	0800	510	20	4.8	52
8-8	F	0430	520	20	5.5	60
8-13	W	1400	300	22	4.2	48
8-20	W	1315	460	23	4.8	55
8-27	W	1415	290	23	4.6	53
9-11	Th	1720	450*	21*	2.2*	24*
9-18	Th	1220	350	22	3.7	42
Average			460	21	5.2	58

* Excluded from average.- Discharge indeterminate due to timing of controlled release from upstream dams.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 46 - Located on Tuckasegee River 4.2 miles below Scott Creek. Drainage Area (sq. mi.) 360

Date Col. 1958	Day	Time	Dis. cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. as $CaCO_3$ ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. 20°C ppm	B.O.D. 25°C lbs/day	Colif. M.P.N. per 100 ml.	Settleable Solids ml/l	Sulfide ppm	Sulphate ppm
6-20	F	1100	590	18	75	30	61	128	189	7.0	0	30	9	0.5	6.5	68	> 16#	>64,000#	43,000	0.2	0	10
7-2	W	1055	504	20	70	20	47	116	163	7.5	0	31	10	1	6.3	69	33	110,000	4,300	0.5	0	16
7-7	M	1340	352*	21*	18*	15*	17*	69*	86*	7.4*	0*	12*	11*	0.5*	8.3*	92*	1.4*	3,300*	9,300*	0.5*	0*	21*
7-16	W	1110	585	20	75	15	17	189	206	7.2	0	30	7	0	6.5	71	34	130,000	9,300	0.2	0	100
7-22	T	1410	652	20	25	100	74	23	97	7.0	0	12	9	0.5	8.0	87	6.7	29,000	-	0.4	0	23
7-31	Th	0910	520	20	75	10	12	178	190	7.1	0	23	10	2	5.4	59	25	88,000	9,300	0.5	0	180
8-8	F	0540	528	20	-	90	44	256	300	7.2	0	24	9	0	6.3	69	17	61,000	75,000	-	0	19
8-13	W	1510	330	21	110	25	46	188	234	7.5	0	38	10	0	4.9	54	49	110,000	9,300	0.1	0	70
8-20	W	1415	466	24	65	10	17	127	144	7.2	0	6	8	0.5	5.6	66	21	66,000	23,000	0.7	0	80
8-27	W	1515	305	24	95	20	10	152	162	7.1	0	26	14	0	4.7	55	26	54,000	21,000	0.5	0	80
9-11	Th	1835	800**	21**	200**	15**	44**	385**	429**	7.4**	0**	66**	11**	1**	3.0**	33**	62**	330,000**	43,000**	1.5**	0**	60**
9-18	Th	1335	263	23	100	9	12	44	56	7.1	0	31	10	0.5	4.7	54	52	92,000	93,000	0.1	0	26
Average			474	21	75	35	34	140	174	6	7.0 to 7.5	25	10	1	5.9	65	29	82,000	32,000	0.4	0	60

\# Indeterminate - excluded from average

* Excluded from average. Shows river condition after four days of no Mead waste discharge.

** Excluded from average. Discharge indeterminate due to timing of controlled release from upstream dams.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 47 - Located on the Tuckasegee River 5.9 miles below Scott Creek Drainage Area (sq. mi.) 369

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-20	F	1015	600	19	60	40	6.9	0	25	10	0.5	6.2	67	16	65,000	9,300
7-2	W	1115	515	21	80	25	6.9	0	30	10	0.5	6.2	69	30	100,000	5,800
7-22	T	1510	670	20	-	-	-	-	-	-	-	8.1	88	-	-	-
7-31	Th	1010	520	20	-	-	--	-	-	-	-	5.5	60	-	-	-
8-8	F	0640	540	20	-	-	-	-	-	-	-	5.8	63	-	-	-
8-13	W	1610	340	21	-	-	-	-	-	-	-	5.1	57	-	-	-
8-20	W	1515	500	24	-	-	-	-	-	-	-	4.9	57	-	-	-
8-27	W	1615	320	24	-	-	-	-	-	-	-	4.7	55	-	-	-
9-11	Th	1935	810**	21**	-	-	-	-	-	-	-	3.2**	35**	-	-	-
9-18	Th	1450	280	24	-	-	-	-	-	-	-	5.0	58	-	-	-
Average			476	21	-	-	6.9 to 6.9	-	-	-	-	5.7	64	-	-	-

** Excluded from average. Discharge indeterminate due to timing of controlled release from upstream dams.

Station 48 - Located on the Tuckasegee River 7.1 miles below Scott Creek. Drainage Area (sq. mi.) 370

6-20	F	1000	617	17	55	75	6.9	0	27	9	0.5	6.6	68	16	67,000	9,300
7-2	W	1130	525	21	80	15	7.1	0	31	12	0.5	6.0	67	29	100,000	4,300
7-22	T	1540	690	20	-	-	-	-	-	-	-	8.0	87	-	-	-
7-31	Th	1040	520	21	-	-	-	-	-	-	-	5.3	59	-	-	-
8-8	F	0710	550	20	-	-	-	-	-	-	-	5.8	63	-	-	-
8-13	W	1640	350	21	-	-	-	-	-	-	-	5.1	57	-	-	-
8-20	W	1545	540	25	-	-	-	-	-	-	-	4.8	57	-	-	-
8-27	W	1645	322	24	-	-	-	-	-	-	-	4.9	57	-	-	-
9-11	Th	2030	820**	20**	-	-	-	-	-	-	-	3.3**	36**	-	-	-
9-18	Th	1500	300	25	-	-	-	-	-	-	-	5.0	60	-	-	-
Average			490	22	-	-	6.9 to 7.1	-	-	-	-	5.7	64	-	-	-

** Excluded from average. Discharge indeterminate due to timing of controlled release from upstream dams.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 49 - Located on the Tuckasegee River 11.0 miles below Scott Creek and above Oconaluftee River. Drainage Area (sq. mi.) 400

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day ppm 20°C	B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-20	F	0945	715	16	65	40	7.1	0	31	9	-	5.9	59	16	77,000	7,500
7-2	W	1205	588	23	80	20	7.0	0	29	12	0.5	5.3	61	23	91,000	15,000
7-7	M	1450	450*	22*	14*	20*	6.5*	0*	12*	12*	0.5*	7.9*	89*	1.7*	5,200*	750*
7-16	W	1425	730	24	60	10	7.4	0	29	11	0	5.3	62	24	120,000	9,300
7-22	T	1725	940	21	20	85	6.8	0	11	6	0.5	7.7	86	5.6	36,000	-
7-31	Th	1225	634	23	60	9	7.0	0	26	11	1	5.0	58	21	90,000	23,000
8-8	F	0855	640	21	-	160	6.7	0	19	9	0	5.3	59	10	43,000	93,000
8-13	W	1825	1,070	22	65	65	7.2	0	25	10	0	5.5	62	21	150,000	4,300
8-20	W	1730	596	25	95	15	6.9	0	7	10	0	4.4	53	43	170,000	93,000
8-27	W	1830	366	24	110	30	6.9	0	31	12	0.5	4.4	52	24	59,000	9,300
9-11	Th	2230	960#	20#	150#	30#	7.2#	0#	48#	12#	0.5#	3.8#	41#	48#	310,000#	23,000#
9-18	Th	1734	305	23	100	9	7.0	0	30	10	1	4.5	52	44	91,000	23,000
Average			658	22	75	45	6.5 to 7.4	0	24	10	0	5.3	60	23	93,000	31,000

* Excluded from average - shows river condition after four days of no Mead waste discharge.
\# Excluded from average - discharge indeterminate due to timing of controlled release from upstream dams.

Station 50 - Located on Raven Fork at Big Cove Ranch to define quality of water for bathing.

6-24	T	1100	15
7-17	Th	1630	<3.6
7-21	M	0840	<3.6
8-25	M	1700	150
Average			<43

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 51 - Located on Mingus Creek above water intake for Cherokee. Drainage Area (sq. mi.) 4.70

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-24	T	1200	-	14	1	10	6.5	0	8	3	0.5	9.2	89	0.9	-	<3.6
7-17	Th	1550	-	18	7	5	7.1	0	11	7	0	8.8	92	1.1	-	9.1
7-21	M	0930	-	16	6	7	7.1	0	9	5	0	8.8	88	-	-	<3.6
8-12	T	1100	-	17	4	10	6.5	0	8	6	0.5	8.2	84	2.0	-	43
8-25	M	1640	-	18	5	10	6.5	0	1	3	0.5	8.6	90	1.0	-	23
Average			-	17	5	8	6.5 to 7.1	0	7	5	0	8.7	89	1.3	-	<16

Station 52 - Located on the Oconaluftee River above the point of discharge of effluent from the Cherokee Sewage Treatment Plant. Drainage Area (sq. mi.) 131

6-24	T	1315	204	18	4	3	6.6	0	10	6	0	9.3	97	0.6	830	230
7-17	Th	1755	315	21	6	7	6.7	0	8	6	0	8.2	91	0.5	1,100	93
7-21	M	0655	340	17	14	7	6.6	0	5	5	0.5	8.7	89	0.4	920	930
8-12	T	1000	280	20	7	15	6.6	0	7	4	0	8.6	94	1.4	2,600	2,400
8-25	M	1530	295	21	7	15	6.5	0	2	5	0.5	8.2	91	1.2	2,400	430
9-17	W	0725	122	19	6	10	6.6	0	9	6	1	8.7	93	0.2	160	930
Average			259	19	7	10	6.5 to 6.7	0	7	5	0	8.6	92	0.7	1,300	840

Station 53 - Located on the Oconaluftee River 1500' below the point of discharge of effluent from the Cherokee sewage treatment plant. Drainage Area (sq. mi.) 133

6-24	T	1300	204	18	4	5	6.5	0	12	6	0.5	9.1	95	0.5	690	2,300
7-17	Th	1735	315	21	7	7	6.9	0	8	7	0	8.3	92	0.7	1,500	<36*
7-21	M	0715	340	17	14	5	6.5	0	6	5	0	8.8	90	0.1	230	2,300
8-12	T	1030	280	20	7	15	6.7	0	8	5	0	8.5	93	2.3	4,300	9,300
8-25	M	1610	295	21	7	15	6.6	0	2	5	0.5	8.6	96	1.8	3,600	930
9-17	W	0740	122	19	5	10	6.6	0	9	7	0.5	8.7	93	0.4	330	430
Average			259	19	7	10	6.5 to 6.9	0	8	6	0	8.7	93	1.0	1,800	2,500

* Indeterminate - excluded from average.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 54 - Located on the Oconaluftee River above its confluence with the Tuckasegee River. Drainage Area (sq.mi.)188

Date Col. 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D.O. ppm	D.O. % Sat.	5-Day B.O.D. ppm	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.	Settleable Solids ml/l
6-23	M	0915	300	20	6	10	6.5	0	10	6	1	8.3	91	1.3	2,600	4,300	-
7-2	W	1220	240	22	7	10	6.9	0	10	7	1	8.8	100	0.7	1,100	4,300	-
7-7	M	1510	275	21	11	25	6.6	0	9	13	0.5	8.3	93	3.0	5,600	2,100	-
7-16	W	1520	-	21*	6*	15*	6.6*	0*	12*	11*	0*	8.7*	97*	1.1*	-	930*	-
7-22	T	1820	-	19*	12*	35*	6.8*	0*	9*	9*	0.5*	8.7*	93*	1.2*	-	-	-
7-31	Th	1320	-	21*	7*	10*	6.6*	0*	10*	10*	1*	8.2*	91*	0.4*	-	9,300*	-
8-8	F	0950	310	19	-	30	6.5	0	5	8	0	7.9	84	1.0	2,100	93,000	-
8-13	W	1930	420	21	12	15	6.9	0	8	6	0.5	8.2	91	1.5	4,300	36	-
8-20	W	1845	300	21	7	3	6.7	0	2	6	0	8.4	93	2.4	4,900	930	-
8-27	W	1945	285	22	12	15	6.3	0	12	6	1	8.2	93	0.8	1,500	4,300	-
9-11	Th	2300	340	19	17	60	6.5	0	11	5	0.5	5.5	59	5.0	11,000	2,300	9.0
9-18	Th	1800	280	21	11	9	6.8	0	9	5	0.5	8.0	89	0.7	1,300	23,000	1.6
Average			306	21	10	20	6.3 to 6.9	0	8	8	1	8.0	88	1.8	3,800	15,000	-

* Excluded from average - rating undefined.

Station 55 - Middle - Located on Tuckasegee River below Oconaluftee River and 13.8 miles below Scott Creek. Drainage Area (sq. mi.) 598

6-23	M	0930	720	20	6	15	6.3	0	11	8	1	8.2	89	0.8	3,900	3,900	-
7-2	W	1240	780	22	38	35	7.0	0	16	8	0.5	7.9	90	6.1	32,000	23,000	-
7-7	M	1525	670**	22**	13**	20**	6.5**	0**	10**	14**	0.5**	8.1**	92**	2.8**	13,000**	2,100**	-
7-16	W	1550	1,070	21	16	15	6.7	0	12	12	0	8.0	89	3.9	28,000	9,300	-
Average			857	21	20	22	6.3 to 7.0	0	13	9	1	8.0	89	3.6	21,000	12,000	-

** Excluded from average. Shows condition of river after four days of no Mead Corp. waste discharge. Middle only discontinued after July 16, 1958, when it was found that more representative data could be obtained by sampling three points.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 55 - Located on Tuckasegee River below Oconaluftee River and 13.8 miles below Scott Creek. (Average of 3 points) Drainage Area (sq. mi.) 598

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day ppm 20°C	B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.	Settleable Solids ml/l
7-22	T	1850	1,370	20	13	50	6.8	0	9	8	0.5	8.2	89	1.5	14,000	-	-
7-31	Th	1350	1,010	23	33	10	6.9	0	21	14	1.0	7.1	82	4.4	30,000	9,700	-
8-8	F	1020	940	20	-	80	6.6	0	11	10	1.0	7.3	80	5.3	34,000	-	-
8-13	W	1950	1,530	21	43	55	7.0	0	17	8	0.5	6.5	72	9.3	96,000	7,800	-
8-20	W	1905	900	23	60	10	6.7	0	5	8	0.5	6.4	73	14.	85,000	7,600	-
8-27	W	2005	590	23	60	15	6.6	0	15	8	0.5	6.8	79	8.6	34,000	-	-
9-12	W	0045	1,200*	20*	80*	110*	6.9*	0*	29*	9*	0.5*	5.8*	64*	32*	260,000*	48,000*	4.0*
9-18	Th	1945	570	20	50	15	7.0	0	19	14	1.0	6.4	70	22	85,000	3,600	0.4
Average			987	21	43	35	6.6 to 7.0	0	14	10	1	7.0	78	9.3	54,000	7,200	

* Excluded from average - discharge indeterminate due to timing of controlled release from upstream dams.

TABLE 9
ANALYTICAL RESULTS
LITTLE TENNESSEE RIVER BASIN

Station 56 - Located on Tuckasegee River 16.6 miles below Scott Creek and above pollution from Bryson City. Drainage Area (sq. mi.) 603

Date Col. 1958	Day	Time	Dis. cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day ppm 20°C	B.O.D. lbs/day 25°C	Colif. M.P.N. per 100 ml.	Settleable Solids ml/l	Sulfide ppm	Sulphate ppm
6-23	M	1015	740	22	8	15	-	-	-	6.5	0	11	7	11	7.8	88	1.0	5,000	5,100	-	0	-
7-2	W	1335	760	24	55	40	58	69	127	6.8	0	19	8	0.5	6.4	75	11	56,000	9,300	0.0	0	20
7-7	M	1620	710*	23*	19*	20*	13*	43*	56*	6.6*	0*	9*	24*	1*	8.0*	92*	2.6*	12,000*	2,300*	0.1*	0*	24*
7-16	W	1710	1,080	22	27	9	13	77	90	6.8	0	15	10	0	7.2	82	3.0	22,000	9,300	0.3	0	60
7-22	T	2010	1,360	19	16	45	60	22	82	7.0	0	11	6	0.5	7.8	83	2.1	19,000	-	0.3	0	18
7-31	Th	1510	1,000	24	40	15	31	66	97	7.0	0	24	12	1	6.1	72	5.9	40,000	230,000	0.2	0	110
8-8	F	1140	1,000	20	-	140	203	63	266	6.9	0	19	12	0.5	7.0	76	5.2	35,000	240,000	-	0	50
8-13	W	2110	1,510	22	48	100	57	280	337	7.1	0	18	8	0	6.7	76	5.4	55,000	23,000	0.5	0	17
8-20	W	2015	980	24	60	10	29	118	147	6.8	0	7	11	1	5.6	66	6.2	41,000	23,000	0.2	0	80
8-27	W	2115	590	23	55	15	8	98	106	6.9	0	19	7	0.5	6.0	69	7.7	31,000	7,500	0.1	0	140
9-12	Th	0230	1,140#	20#	100#	55#	-	-	-	6.9#	0#	32#	10#	0#	5.6#	61#	32#	250,000#	110,000#	0.8#	0#	-
9-18	Th	2130	470	20	60	9	4	110	114	7.0	0	20	17	1	6.3	69	20	63,000	9,300	0.2	0	16
Average			949	22	41	40	51	100	152	6.5 to 7.1	0	16	10	2	6.7	76	6.8	37,000	62,000	0.2	0	57

* - Excluded from average - shows condition of river after 4 days of no Mead waste discharge.
\# - Excluded from average - discharge indeterminate due to timing of controlled release from upstream dam.

Station 57 - Located on Deep Creek to define quality of water for bathing and irrigation. Drainage Area (sq. mi.) 40.2

6-24	T	1415	56	19	4	5	-	-	-	6.6	0	10	4	0	8.7	93	1.2	450	<3.6#			
7-8	T	1115	-	17**	14**	7**	-	-	-	7.3**	0**	12**	6**	0.5**	8.7**	89**	1.2**	-	2,400**			
7-17	Th	1830	91	19	6	3	-	-	-	6.9	0	8	4	0	8.1	87	1.1	680	9.1			
7-21	M	1000	88	18	7	3	-	-	-	6.7	0	5	5	0	8.7	91	0.3	180	43			
8-25	M	0800	78	18	9	15	-	-	-	6.6	0	2	4	0	8.6	90	1.2	630	390			
Average			78	19	7	7	-	-	-	6.6 to 7.3	0	6	4	0	8.5	90	1.0	490	150			

** Excluded from average - flow undetermined. # Excluded from average - indeterminate.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 57-A - Located on Deep Creek at proposed swimming area. Drainage Area (sq. mi.) 43.9

Date Collected 1958	Day	Time	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	Coliform M.P.N. per 100 ml.
6-10	T	1100	16	4	25	5.8	0	4	3	0	9.0	90	1.5	930
6-24	T	1430	20	4	5	6.5	0	11	6	0.5	8.7	95	1.1	930
7-8	T	1130	18	-	-	-	-	-	-	-	8.1	85	-	4,600
7-17	Th	1840	19	-	-	-	-	-	-	-	-	-	-	2,300
7-21	M	1020	-	-	-	-	-	-	-	-	-	-	-	430
8-25	M	0830	18	9	15	6.5	0	2	5	0	8.8	92	1.6	430
Average			18	6	15	5.8 to 6.5	0	6	5	0	8.7	91	1.4	1,600

TABLE 9
ANALYTICAL RESULTS
LITTLE TENNESSEE RIVER BASIN

Station 58 - Located on Tuckasegee River 18.5 miles below Scott Creek, below 16 outfalls and above 5 outfalls discharging untreated sewage from Bryson City. Drainage Area (sq. mi.) 655

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-23	M	1100	778	21	8	15	-	-	-	6.6	0	11	7	2	7.9	88	1.6	8,400	60,000
7-2	W	1435	814	26	55	30	-	-	-	7.1	0	20	9	0.5	6.9	84	5.4	30,000	46,000
7-7	M	1720	720*	24*	15*	15*	24*	65*	89*	6.6*	0*	10*	16*	1*	7.9*	93*	1.9*	9,200*	3,200*
7-16	W	1810	1,210	22	23	7	51	9	60	6.8	0	15	8	0	7.1	81	3.2	26,000	8,900
7-22	T	2110	1,800	20	15	45	68	32	100	6.8	0	9	6	0.5	8.0	87	1.5	18,000	-
7-31	Th	1610	1,120	25	36	7	38	55	93	7.0	0	15	10	1	6.4	76	4.9	36,000	18,000
8-8	F	1240	967	24	-	200	213	50	263	6.8	0	16	12	0.5	7.2	84	4.7	31,000	9,200
8-13	W	2210	1,650	22	44	50	33	107	140	7.1	0	18	8	0	6.7	76	5.9	66,000	23,000
8-20	W	2115	1,060	24	55	10	56	96	152	6.7	0	5	9	1	6.3	74	10	72,000	36,000
8-27	W	2215	606	22	55	15	12	97	109	6.6	0	16	10	0.5	6.5	73	7.5	31,000	-
9-12	F	0400	1,120#	19#	95#	55#	-	-	-	6.8#	0#	28#	12#	0.5#	5.6#	60#	31#	230,000#	270,000#
9-18	Th	2300	667	20	60	20	19	71	90	7.0	0	21	13	2	6.8	74	14	63,000	14,000
Average			1,070	23	39	40	61	65	126	6.6 to 7.1	0	15	9	1	7.0	80	6.0	38,000	27,000

* Excluded from average - shows river condition after four days of no Mead waste discharge.
\# Excluded from average - discharge indeterminate due to timing of controlled realease from upstream dams.

Station 59 - Located on Jenkins Branch above water intake for Bryson City. Drainage Area (sq. mi.) .34

Date Collected 1958	Day	Time	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	Coliform M.P.N. per 100 ml.
6-24	T	1615	16	1	3	6.5	0	12	7	0	8.5	85	0.9	15
7-8	T	1200	17	8	45	6.7	0	10	7	2	9.1	93	0.9	9.1
7-17	Th	1940	18	3	-	6.7	0	9	4	0	8.4	88	0.6	43
7-21	M	1115	18	5	5	6.6	0	6	5	0	8.2	86	0.4	23
8-25	M	0900	19	7	15	6.5	0	2	5	0	8.4	90	0.9	< 3.6
Average			18	5	15	6.5 to 6.7	0	8	6	0	8.5	88	0.7	< 19

TABLE 9
ANALYTICAL RESULTS
LITTLE TENNESSEE RIVER BASIN

Station 60 - Located on Tuckasegee River 19.3 miles below Scott Creek. Drainage Area (sq. mi.) 660

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	Suspended	Dissolved	Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-23	M	1200	941	22	9	15	-	-	-	6.7	0	11	8	2	7.9	89	0.8	5,100	18,000
7-2	W	1505	814	26	46	40	46	67	113	7.0	0	19	11	0.5	6.9	84	6.1	34,000	25,000
7-7	M	1720	720*	24*	13*	15*	20*	49*	69*	6.8*	0*	10*	18*	1*	7.8*	92*	1.5*	7,300*	11,000*
7-16	W	1840	1,220	22	23	10	14	98	112	6.8	0	15	12	0	7.2	82	2.8	23,000	11,000
7-22	T	2140	1,830	20	15	50	216	16	232	6.8	0	9	6	0.5	8.2	89	1.6	20,000	-
7-31	Th	1640	1,010	25	37	9	13	65	78	6.9	0	14	15	1	6.5	78	10	68,000	140,000
8-8	F	1310	1,050	24	-	180	158	80	238	6.5	0	15	9	1	7.3	85	7.7	55,000	130,000
8-13	W	2240	1,620	22	45	50	42	222	264	7.0	0	18	7	0.5	6.6	75	5.2	57,000	3,000
8-20	W	2155	1,050	24	55	10	61	75	136	6.9	0	4	10	1	6.5	76	16	110,000	47,000
8-27	W	2255	616	22	55	15	48	73	121	6.9	0	19	8	0.5	6.5	74	11	46,000	82,000
9-12	F	0530	1,010#	19#	90#	60#	75#	85#	160#	6.8#	0#	30#	10#	0#	5.9#	63#	43#	290,000#	200,000#
9-19	F	0040	967	20	55	20	59	1,095	1,154	7.0	0	22	14	2	6.5	71	19	120,000	42,000
Average			1,110	23	38	40	73	199	272	6.5 to 7.0	0	15	10	1	7.0	80	8.0	54,000	55,000

* Excluded from average - shows river condition after four days of no discharge of Mead waste.
\# Excluded from average - discharge indeterminate due to timing of controlled release from upstream dams.

Station 61 - Located on Lands Creek above water intake for Bryson City. Drainage Area (sq. mi.) 2.52

6-24	T	1520	-	16	0	3	-	-	-	6.5	0	8	4	0	9.2	92	0.7	-	3.6
7-8	T	1030	-	16	6	9	-	-	-	6.8	0	11	6	2	8.9	89	1.3	-	430
7-21	M	1830	-	17	-	-	-	-	-	-	-	-	-	-	8.4	86	-	-	430
8-12	T	1310	-	19	4	7	-	-	-	6.5	0	5	6	0.5	8.5	91	1.8	-	430
8-25	M	0930	-	18	4	15	-	-	-	6.5	0	1	6	0.5	8.6	90	0.5	-	<3.6
Average			-	17	4	9	-	-	-	6.5 to 6.8	0	6	6	1	8.7	90	1.1	-	<260

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 62 - Located on Little Tennessee River (Fontana Reservoir) at water intake for Fontana Village. Drainage Area (sq.mi.) 1,571

Date Collected 1958	Day	Time	Coliform M.P.N. per 100 ml.
6-25	W	1045	15
7-14	M	0840	<3.6
7-24	Th	1330	43
8-1	F	0600	<3.6
9-2	T	1500	9.1
Average			<15

Station 63 - Located on Little Tennessee River (Lake Cheoah) below Fontana Dam and above point of discharge of effluent from Fontana Village sewage treatment plant. Average three points. Drainage Area (sq. mi.) 1,571

Date Col. 1958	Day	Time	Dis. cfs	Temp. °C	True Color Units	Turbidity Units	Solids (ppm) Suspended	Solids (ppm) Dissolved	Solids (ppm) Total	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. 20°C ppm	5-Day B.O.D. 25°C lbs/day	Colif. M.P.N. per 100 ml.	Settleable Solids ml/l	Sulfide ppm	Sulphate ppm
6-25	W	1230	5,444	13	4	13	-	-	-	6.7	0	11	6	1	9.0	85	0.4	15,000	33	0.0	0	-
7-14	M	0955	4,300	11	6	6	-	-	-	6.5	0	10	7	0	8.7	74	0.6	17,000	11	-	0	-
7-24	Th	1420	4,255	12	6	9	-	-	-	6.3	0	10	7	0	8.5	78	0.6	17,000	<320*	trace	0	-
8-1	F	0715	4,400	13	7	10	-	-	-	7.4	0	30	7	0	7.9	75	0.5	15,000	< 10*	-	0	-
9-2	T	1250	7,035	17	9	4	16	24	40	6.5	0	9	7	0	6.7	69	1.1	52,000	36	-	0	20
Average			5,087	13	6	8	-	-	-	6.3 to 7.4	0	14	7	0	8.2	76	0.6	23,000	27		0	-

*-Indeterminate - excluded from average.

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 64 - Located on Little Tennessee River (Lake Cheoah) about 1,500' below point of discharge of effluent from Fontana Village sewage treatment plant. Average of three points. Drainage Area(sq. mi.) 1,571

Date Collected 1958	Day	Time	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	Coliform M.P.N. per 100 ml.	Settleable Solids ml/l	Sulfide-ppm
6-25	W	1300	13	5	18	6.5	0	9	6	0.5	9.0	85	0.2	520	0.0	0
7-14	M	1030	11	6	5	6.5	0	10	7	0	8.8	75	1.0	670	-	0
7-24	Th	1505	12	6	9	6.4	0	8	7	0	8.4	77	0.3	170	Trace	0
8-1	F	0745	13	9	15	7.3	0	25	7	0	8.1	76	0.6	<310*	-	-
9-2	T	1240	17	8	6	6.5	0	8	7	0	6.7	69	0.6	27	-	-
Average			13	7	10	6.4 to 7.3	0	12.	7	0	8.2	76	0.5	350	-	0

* Indeterminate - excluded from average.

Station 65 - Located on Little Tennessee River 300' above point of discharge of hydro water from Santeetlah Power House. (Average of three points) Drainage Area (sq. mi.) 1,583

6-25	W	1445	17	5	11	6.5	0	9	7	0.5	9.4	96	0.7	320	0	0
7-14	M	1130	11	6	4	6.5	0	10	8	0	9.0	76	1.2	530	-	0
7-24	Th	1015	12	6	9	6.4	0	8	8	0	8.1	75	0.6	270	Trace	0
8-1	F	0830	13	9	15	7.2	0	21	8	0	7.8	73	0.5	400	-	0
9-2	T	1205	18	8	4	6.4	0	8	7	0.5	6.8	71	1.0	94	-	-
Average			14	7	9	6.4 to 7.2	0	11	8	0	8.2	78	0.8	320	-	0

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 66 - Located on Dednan Branch above water intake for Santeetlah Village. Drainage Area (sq. mi.) .26

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.	Settleable Solids ml/l
6-25	W	1530	-	19	1	9	6.6	0	10	6	0.5	8.6	92	0.4	-	230	0
7-14	M	1420	-	20	5	3	6.7	0	10	5	0	8.4	92	0.8	-	3.6	-
7-24	Th	1130	-	18	15	9	6.5	0	9	9	0	8.5	89	1.0	-	930	-
8-1	F	1230	-	20	6	15	7.4	0	21	6	0	7.9	86	1.2	-	21	-
9-2	T	1045	-	19	7	3	6.5	0	8	5	0	7.6	81	3.0	-	430	-
Average			-	19	7	8	6.5 to 7.4	0	12	6	0	8.2	88	1.3	-	320	-

Station 67 - Located on Deaver Branch below point of discharge of untreated sewage from eleven houses at Santeetlah Village. Drainage Area (sq.mi.) .71

6-25	W	1615	0.51	20	7	15	6.7	0	10	7	0.5	8.1	88	1.2	4	43,000	-
7-14	M	1340	.69	20	7	7	6.9	0	12	9	0	7.9	86	3.1	14	43,000	-
7-24	Th	1145	2.5	19	10	70	6.5	0	7	11	0	8.3	89	1.8	30	1,100,000	-
8-1	F	1030	.58	20	11	20	7.4	0	23	5	0	7.9	86	1.8	7	230,000	-
9-2	T	1110	.12	20	9	15	6.7	0	11	7	0.5	8.0	87	2.9	2	43,000	
Average			0.9	20	9	25	6.5 to 7.4	0	13	8	0	8.0	87	2.2	11	290,000	-

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 68 - Located on Little Tennessee River (Lake Cheoah) 0.5 of a mile below the point of discharge of Hydro water from Santeetlah Power Plant. Drainage Area (sq. mi.) 1,583

Date Col. 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.	Settleable Solids ml/l	Sulfide ppm
6-25	W	1500	900	13	5	9	6.6	0	10	6	0	9.0	85	0.1	600	54	0	0
7-14	M	1150	906	11	5	4	6.4	0	10	6	0	8.6	73	0.7	4,300	250	-	0
7-24	Th	1030	912	12	6	7	6.1	0	5	7	0	7.6	70	0.3	1,800	1,800	Trace	0
8-1	F	0900	914	13	8	20	7.0	0	20	6	0	7.4	70	0.7	4,300	20	-	0
9-2	T	1155	428	18	8	5	6.3	0	8	8	0.5	6.8	71	0.9	2,600	120	-	-
Average			812	13	6	9	6.3 to 7.0	0	11	7	0	7.9	74	0.5	2,700	450	-	0

Station 69 - Located on Tulula Creek to define condition of water above all pollution from Town of Robbinsville. Drainage Area (sq. mi.) 28.6

6-26	Th	1435	87	20	21	50	6.5	0	10	17	0.5	8.0	87	1.5	880	23,000	-	-
7-11	F	0820	80	18	7	10	7.4	0	15	9	0.5	8.6	90	0.8	430	-	-	-
7-23	W	1015	44	19	6	9	7.1	0	9	9	0	8.3	89	1.4	420	-	-	-
8-7	Th	1215	34	19	-	3	7.0	0	9	8	0.5	8.4	90	2.8	640	9,300	-	-
9-8	M	0715	17	16	10	20	7.2	0	13	7	0.5	8.7	87	1.6	180	46,000	-	-
9-16	T	0645	14	19	7	15	6.7	0	8	9	0	8.2	88	0.6	57	9,300	-	-
Average			46	19	10	20	6.5 to 7.4	0	11	10	0	8,4	89	1.5	430	22,000	-	-

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 70 - Located on Sweetwater Creek above all pollution from Robbinsville. Drainage Area (sq. mi.) 13.6

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day ppm 20°C	B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-26	Th	1445	50	19	27	75	6.6	0	11	26	1	8.1	87	1.2	410	240,000
7-11	F	0855	24	19	7	15	6.9	0	14	10	1	8.4	90	0.8	130	-
7-23	W	1030	17	20	6	9	6.6	0	12	9	0.5	8.2	89	0.8	92	-
8-7	Th	1230	16	19	-	9	6.6	0	10	10	0.5	8.9	95	2.1	230	43,000
9-8	M	0725	9.5	16	9	9	6.6	0	12	9	0.5	8.7	87	2.4	150	4,300
9-16	T	0655	9.2	18	7	20	6.6	0	11	10	0	8.6	90	1.0	62	4,300
Average			21	19	11	25	6.6 to 6.9	0	12	12	1	8.5	90	1.4	180	73,000

Station 71 - Located on Cheoah River below three outfalls discharging untreated sewage from Robbinsville. Drainage Area (sq. mi.) 43.1

6-26	Th	1410	200	21	27	75	6.6	0	10	23	1	7.9	88	1.9	2,600	84,000
7-11	F	0930	140	19	6	10	6.9	0	10	10	2	8.8	94	0.7	660	-
7-23	W	1055	58	20	6	9	6.6	0	10	7	0.5	8.6	94	1.8	700	-
8-7	Th	1253	50	20	-	7	6.5	0	11	10	1	8.9	97	1.5	510	68,000
9-8	M	0740	28	17	17	15	6.6	0	13	11	0	8.1	83	6.1	1,200	1,700,000
9-16	T	0730	28	19	8	20	6.6	0	11	9	0	8.2	88	3.7	700	33,000
Average			84	19	13	25	6.5 to 6.9	0	11	12	1	8.4	91	2.6	1,100	470,000

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 72 - Located on Long Creek to define quality of water supply for Robbinsville. Drainage Area (sq. mi.) 4.58

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-26	Th	1330	-	17	9	20	6.5	0	6	10	2	8.2	84	0.3	-	930
7-11	F	0955	-	16	4	7	6.8	0	8	7	0.5	8.8	89	0.4	-	21
7-23	W	1130	-	17	3	3	6.5	0	4	8	0	8.7	89	..	-	43
8-7	Th	1115	-	16	-	5	6.6	0	6	5	0.5	9.0	90	1.1	-	93
9-8	M	0820	-	14	5	3	7.0	0	12	4	0	9.1	88	1.0	-	93
9-16	T	0755	-	16	4	15	6.6	0	8	5	0	9.0	90	0.8	-	23
Average			-	16	5	9	6.5 to 7.0	0	7	7	1	8.8	88	0.8	-	200

Station 73 - Located on Long Creek above 2 outfalls discharging untreated sewage from Robbinsville. Drainage Area (sq. mi.) 6.03

6-26	Th	1345	15	19	28	70	6.4	0	7	16	1	8.2	88	1.5	150	46,000
7-11	F	1035	19	17	5	10	6.6	0	15	5	1	8.7	89	0.8	100	-
7-23	W	1200	12	19	5	7	6.3	0	9	9	0	8.3	89	0.7	57	-
8-7	Th	0940	8.3	17	-	7	6.4	0	8	7	0.5	8.4	86	1.4	78	43,000
9-8	M	0830	5.9	16	7	10	6.6	0	9	7	0.5	9.0	90	2.4	96	93,000
9-16	T	0835	6.2	17	6	15	6.6	0	9	10	0	8.9	91	1.2	50	460,000
Average			11	18	10	20	6.3 to 6.6	0	10	9	1	8.6	89	1.3	89	160,000

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 74 - Located on Long Creek above Cheoah River and below two outfalls discharging untreated sewage from Robbinsville. Drainage Area (sq. mi.) 11.8

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-26	Th	1400	43	19	29	70	6.5	0	6	25	1	8.0	86	3.6	1,000	150,000
7-11	F	1105	36	18	7	10	6.6	0	9	6	2	8.7	91	1.9	460	-
7-23	W	1230	25	19	6	5	6.5	0	9	9	0	8.3	89	1.6	270	-
8-7	Th	0950	14	19	-	3	6.5	0	9	8	0.5	8.3	89	2.2	210	150,000
9-8	M	0800	9.6	16	10	10	6.6	0	11	8	0.5	8.5	85	2.6	170	46,000
9-16	T	0905	9.2	19	9	15	6.7	0	11	9	0	8.3	89	2.2	140	240,000
Average			23	18	12	20	6.5 to 6.7	0	9	11	1	8.4	88	2.4	380	150,000

Station 75 - Located on Cheoah River below all pollution from Town of Robbinsville. Drainage Area (sq. mi.) 55.3

6-26	Th	1425	260	20	27	90	6.6	0	11	19	1	8.0	87	2.4	4,200	150,000
7-11	F	1130	180	19	6	9	6.8	0	11	10	1	8.7	93	1.0	1,200	-
7-23	W	1250	85	20	7	9	6.5	0	8	8	0.5	8.5	93	1.8	1,000	-
8-7	Th	1000	65	20	-	7	6.6	0	6	8	0.5	8.9	97	2.2	970	9,300
9-8	M	0845	38	17	9	9	6.6	0	11	9	0	8.9	91	1.6	410	46,000
9-16	T	0925	37	20	8	15	6.6	0	8	10	0	9.1	99	2.2	550	93,000
Average			111	19	11	25	6.5 to 6.8	0	9	11	1	8.7	93	1.9	1,400	75,000

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 76 - Located on Cheoah River above Meadow Branch and above all pollution from Tapoca. Drainage Area (sq. mi.) 213

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D.O. ppm	D.O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-27	F	0630	62	18	9	20	6.6	0	8	20	0	8.6	90	0.8	330	2,100
7-10	Th	1105	69	21	10	15	6.8	0	11	10	0.5	8.6	96	1.0	470	-
7-23	W	1420	58	22	9	5	6.7	0	6	7	0	7.9	89	0.8	310	-
8-7	Th	1600	50	21	-	15	6.7	0	7	8	0.5	8.1	90	1.3	440	3,600
9-8	M	0950	26	19	9	5	6.8	0	10	5	0	9.2	98	1.3	230	4,300
9-16	T	1020	24	21	8	15	6.6	0	9	6	0	9.0	100	0.8	130	230
Average			48	20	9	15	6.6 to 6.8	0	9	9	0	8.6	94	1.0	320	2,600

Station 77 - Located on Meadow Branch below points of discharge of untreated sewage from Bethel community and above confluence with Cheoah River. Drainage Area (sq. mi.) .69

6-27	F	0730	.76	18	8	25	6.5	0	15	48	1	8.2	86	1.3	7	93,000
7-10	Th	1215	.62	20	8	25	7.0	0	20	13	0.5	8.3	91	1.7	7	-
7-23	W	1450	.68	22	10	10	6.6	0	15	14	0.5	7.8	88	1.1	5	-
8-7	Th	1650	.39	19	-	15	6.7	0	12	14	0	8.0	86	1.8	5	93,000
9-8	M	0940	.46	18	10	30	7.0	0	15	12	2	8.8	92	1.6	5	2,300
9-16	T	1030	.51	21	9	65	6.6	0	14	14	0	8.2	91	2.7	9	7,500
Average			.57	20	9	30	6.5 to 7.0	0	15	19	1	8.2	89	1.7	6	49,000

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 78 - Located on Yellowhammer Branch at intake to water supply of Tapoco, Inc. Drainage Area (sq.mi.) 1.07

Date Collected 1958	Day	Time	Discharge cfs	Temp.	True Color Units	Turbidity Units	pH Range	Alkalinity Phen. ppm	Alkalinity Tot. ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-27	F	0900	-	17	4	10	6.2	0	6	45	0	8.9	91	0.2	-	150
7-14	M	1310	-	19	6	3	6.7	0	12	5	0.5	8.6	92	1.1	-	3.6
7-23	W	1530	-	19	5	3	6.5	0	4	6	0	8.5	91	0.7	-	43
8-7	Th	1730	-	16	-	7	6.8	0	5	7	0.5	8.4	84	2.7	-	230
9-8	M	1025	-	17	6	15	7.0	0	9	5	0.5	9.0	92	2.0	-	23
9-16	T	1050	-	20	5	10	6.7	0	6	5	0	8.8	96	0.2	-	7.3
Average			-	18	5	8	6.2 to 7.0	0	7	12	0	8.7	91	1.2	-	76

Station 79 - Located on Cheoah River above Little Tennessee River and below Meadow Branch and three outfalls discharging untreated sewage from Tapoco, Inc. Drainage Area (sq. mi.) 215

6-27	F	0800	64	18	9	20	6.3	0	6	10	0	8.9	93	0.6	260	910
7-10	Th	1230	71	21	9	9	6.8	0	10	8	0.5	8.5	95	1.1	530	-
7-23	W	1555	60	22	10	5	6.5	0	8	8	0	8.0	91	0.6	240	-
8-7	Th	1755	51	21	-	15	6.6	0	9	19	0.5	8.0	89	0.9	310	9,300
9-8	M	1010	27	20	9	9	6.8	0	10	7	2	8.9	97	1.4	260	46,000
9-16	T	1110	25	22	7	9	6.6	0	9	6	0	8.6	97	1.5	250	24,000
Average			50	21	9	10	6.3 to 6.8	0	9	10	1	8.5	94	1.0	310	20,000

TABLE 9

ANALYTICAL RESULTS

LITTLE TENNESSEE RIVER BASIN

Station 80 - Located on Little Tennessee River to define quality of water below Cheoah Power Dam and Cheoah River about one mile above Tennessee. Drainage Area (sq. mi.) 1,608

Date Collected 1958	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
6-27	F	0830	P-5,899	10	4	20	6.2	0	6	19	0	9.8	86	0.1	4,000	150
7-10	Th	1120	P-5,089	12	8	9	6.6	0	10	7	0	9.2	85	0.8	27,000	-
7-23	W	1605	P-5,660	13	7	3	6.6	0	6	10	0	8.1	76	0.3	11,000	-
8-7	Th	1805	P-4,904	16	-	7	6.6	0	7	9	0.5	8.4	84	1.5	50,000	250
9-8	M	1045	P-7,434	16	7	5	6.6	0	10	7	1	6.7	67	1.5	75,000	680
9-16	T	1125	P-7,559	19	6	10	6.7	0	9	7	0	5.8	62	1.8	92,000	97
Average			6,091	14	6	9	6.2 to 6.7	0	8	10	0	8.0	77	1.0	43,000	290

P - Based on Power Records of Aluminum Company of America.

EXPLANATION OF TABLE 10, RECOMMENDED CLASSIFICATIONS

The tentative recommended classifications of the surface waters of the Little Tennessee River Basin are given in Table 10. These recommendations are considered to represent the best usages of the streams in the best interest of the public. They are submitted to all concerned for consideration at the public hearing and to the State Stream Sanitation Committee in its determination of the final classifications to be assigned.

* Any natural stream not noted in Table 10 will carry the same classification as the stream to which it is tributary.

Key to Abbreviations Used in Table

Agri.	-	Agriculture	PA	-	Populated Area
DS	-	Domestic Sewage	Rec.	-	Recreation
F	-	Farmlands	SP	-	Slightly Polluted
GP	-	Grossly Polluted	W	-	Woodlands
IW	-	Industrial Waste	WS	-	Water Supply
N	-	Natural	WD	-	Waste Disposal
P	-	Polluted			

Brief Explanation of Water Classifications

Fresh Surface Waters

A-I - Water supply from uninhabited watersheds requiring only approved disinfection.

A-II - Water supply with approved complete treatment.

B - Bathing and recreation.

C - Fish and Wildlife Propagation.

D - Agriculture, including irrigation and livestock watering, drainage and industrial cooling and process water supply.

E - Navigation and disposal of sewage, industrial waste and other wastes with the provision that such disposal will not create an offensive condition.

Note: All streams which are designated trout waters are required to have a minimum dissolved oxygen content of 5.0 ppm.

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Streams*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
I. Little Tennessee River to mouth of Cullasaja R.	WF	N	Agri.	Agri.	D	
A. Betty Creek to N.C.-Ga. State Line	W	N	Fishing	Fishing	C	
1. Wildcat Branch	W	N	Fishing	Fishing	C	
2. Rock Branch	W	N	Fishing	Fishing	C	
3. Falls Branch to N.C.-Ga. State Line	W	N	Fishing	Fishing	C	
4. Barkers Creek to N.C.-Ga. State Line	W	N	Fishing	Fishing	C	
B. Commissioner Creek	WF	N	Agri.	Agri.	D	
C. Waterloo Branch	WF	N	Agri.	Agri.	D	
D. Mulberry Creek	WF	N	Agri.	Agri.	D	
E. Norton Branch (East side Little Tennessee R.)	WF	N	Agri.	Agri.	D	
F. Norton Branch (West side Little Tennessee R.)	WF	N	Agri.	Agri.	D	
1. Bradley Branch	WF	N	Agri.	Agri.	D	
G. Middle Creek	WF	N	Agri.	Agri.	D	
1. Drymans Branch	WF	N	Agri.	Agri.	D	
2. Smart Branch	WF	N	Fishing	Fishing	C	Trout Waters
H. Tessentee Creek	W	N	Fishing	Fishing	C	
1. Cadon Branch	W	N	Fishing	Fishing	C	
2. Nichols Branch	W	N	Fishing	Fishing	C	
3. Whiterock Branch	W	N	Fishing	Fishing	C	
4. Possum Branch	W	N	Fishing	Fishing	C	
5. Stillhouse Branch	W	N	Fishing	Fishing	C	
6. Wheatfield Branch	W	N	Fishing	Fishing	C	
7. Buckeye Creek	W	N	Fishing	Fishing	C	
8. Evans Branch	WF	N	Fishing	Fishing	C	Trout Waters
I. Coweeta Creek	W	N	Fishing	Fishing	C	
1. Shope Fork	W	N	Fishing	Fishing	C	
a. Pennacle Branch	W	N	Fishing	Fishing	C	
b. Camprock Branch	W	N	Fishing	Fishing	C	
c. Cunningham Creek	W	N	Fishing	Fishing	C	
(1). Mill Branch	W	N	Fishing	Fishing	C	
2. Ball Creek	W	N	Fishing	Fishing	C	
a. Henson Creek	W	N	Fishing	Fishing	C	
3. Dryman Fork	W	N	Fishing	Fishing	C	
a. Howard Branch						

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
4. North Fork	W	N	Fishing	Fishing	C	
a. Falls Branch	W	N	Fishing	Fishing	C	
J. Hickory Knoll Creek	WF	N	Agri.	Agri.	D	
1. Doubletop Branch	W	N	Agri.	Agri.	D	
2. Possum Branch	W	N	Agri.	Agri.	D	
K. Bates Branch	WF	N	Agri.	Agri.	D	
1. Hoglot Branch	WF	N	Agri.	Agri.	D	
L. Skeenah Creek	WF	N	Agri.	Agri.	D	
1. North Fork	WF	N	Agri.	Agri.	D	
a. Shope Branch	WF	N	Agri.	Agri.	D	
b. Battle Branch	WF	N	Agri.	Agri.	D	
2. South Fork	WF	N	Agri.	Agri.	D	
a. Black Mountain Br.	W	N	Agri.	Agri.	D	
M. Dowdle Branch	WF	N	Agri.	Agri.	D	
N. Fulchur Branch	WF	N	Agri.	Agri.	D	
O. McDowell Branch	WF	N	Agri.	Agri.	D	
1. Satser Branch	WF	N	Agri.	Agri.	D	
P. Hayes Mill Creek	WF	N	Agri.	Agri.	D	
Q. Owenby Creek	WF	N	Agri.	Agri.	D	
R. Cartoogehaye Cr. to Bridge at U.S. Hwy. 23 & 441	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
1. Jones Creek	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
a. Lee Creek	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
2. Allison Creek	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
a. Cherry Cove Creek	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
b. Ash Flat Branch	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
c. Carpenters Branch	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
3. Lowery Creek	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
4. Poplar Cove Creek	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
a. Broadtree Branch	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Conditions of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
5. Muskrat Creek	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
6. McKee Branch	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
7. Wayah Creek to mouth of Arrowwood Creek	W	N	Bathing	Bathing	B	Wayah Camp Ground Bathing Area
a. Shot Pouch Creek	W	N	Bathing	Bathing	B	Wayah Camp Ground Bathing Area
b. Camp Branch	W	N	Bathing	Bathing	B	Wayah Camp Ground Bathing Area
c. Rough Fork	W	N	Bathing	Bathing	B	Wayah Camp Ground Bathing Area
(1) Right Prong	W	N	Bathing	Bathing	B	Wayah Camp Ground Bathing Area
(2) Left Prong	W	N	Bathing	Bathing	B	Wayah Camp Ground Bathing Area
(3) Grape Cove Branch	W	N	Bathing	Bathing	B	Wayah Camp Ground Bathing Area
d. Brushy Branch	W	N	Bathing	Bathing	B	Wayah Camp Ground Bathing Area
e. Locust Tree Branch	W	N	Bathing	Bathing	B	Wayah Camp Ground Bathing Area
8. Wayah Creek from Arrowwood Creek to mouth	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
a. Arrowwood Creek	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
b. Singletree Branch	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
9. Mill Creek	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
a. Mint Branch	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
10. Lenoir Branch	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
11. Gibson Cove Branch	W	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
12. Potts Creek	WF	N	Fishing	W.S.	A-II	Proposed Franklin Watershed
13. Blaine Creek	WF	N	Agri.	W.S.	A-II	Proposed Franklin Watershed
14. Dobson Creek	WF	N	Agri.	W.S.	A-II	Proposed Franklin Watershed
15. Wallace Branch	WF	N	Agri.	W.S.	A-II	Proposed Franklin Watershed
a. Trimont Branch	WF	N	Agri.	W.S.	A-II	Proposed Franklin Watershed
S. Cartoogehaye Cr. from bridge at U.S. Hwy. 23 & 441 to mouth	WF	SP	Agri.	Agri.	D	D.S. Franklin Hosiery Mill
II. Little Tennessee River from mouth of Cullasaja River to mouth of Nantahala River.	WF & PA	N-P	Fishing & Agri.	Fishing	C	D.S. Town of Franklin
A-1. Cullasaja River	WF & PA	N-P	Fishing	Fishing	C	Trout Waters

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
1. Saltrock Branch	W	N	Fishing	Fishing	C	
2. Ammons Branch	W	N	Fishing	Fishing	C	
3. Mill Creek	PA	N-P	WD	Fishing	C	D.S. Town of Highlands
a. Satulah Branch	PA	N	Fishing	Fishing	C	
4. Monger Creek	PA	N	Fishing	Fishing	C	
5. Big Creek	W	N	Fishing	Fishing	C	
a. Bad Branch	W	N	Fishing	Fishing	C	
b. Houston Br. to dam at Highlands Reservoir	W	N	W.S.	W.S.	A-I	Town of Highlands, W.S.
c. Houston Br. from dam at Highlands Reservoir to mouth	W	N	Fishing	Fishing	C	
6. Skitty Creek to dam at Cliffside Lake	W	N	Bathing	Bathing	B	Cliffside Lake Bathing Area
a. South Skitty Br.	W	N	Bathing	Bathing	B	Cliffside Lake Bathing Area
7. Skitty Cr. from dam at Cliffside Lake to mouth	W	N	Fishing	Fishing	C	
8. Long Branch	W	N	Fishing	Fishing	C	
9. Turtle Pond Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Piney Knob Fork	W	N	Fishing	Fishing	C	Trout Waters
b. Bennies Branch	W	N	Fishing	Fishing	C	Trout Waters
10. Laurel Branch	W	N	Fishing	Fishing	C	
11. Stephens Creek	W	N	Fishing	Fishing	C	
12. Short Creek	W	N	Fishing	Fishing	C	
13. Gold Mine Branch	W	N	Fishing	Fishing	C	
14. Brush Creek	W	N	Fishing	Fishing	C	
a. Rattlesnake Br. to dam at Highlands Reservoir	W	N	W.S.	W.S.	A-I	Town of Highlands Watershed
b. Rattlesnake Br. from dam at Highlands Reservoir to mouth	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
15.Crow Creek	W	N	Fishing	Fishing	C	
16.Buck Creek	W	N	Fishing	Fishing	C	
a. Little Buck Creek	W	N	Fishing	Fishing	C	
(1) Moss Branch	W	N	Fishing	Fishing	C	
17.Peeks Creek	W	N	Fishing	Fishing	C	
18.Walnut Creek	W	N	Fishing	Fishing	C	
a. Katie Creek	W	N	Fishing	Fishing	C	
b. Ledford Branch	W	N	Fishing	Fishing	C	
19.Crows Branch	W	N	Fishing	Fishing	C	
20.Lickskittet Branch	W	N	Fishing	Fishing	C	
21.Stansfield Branch	W	N	Fishing	Fishing	C	
22.Nickajack Creek	W	N	Fishing	Fishing	C	
23.Bryson Branch	W	N	Fishing	Fishing	C	
24.Ellijay Creek	WF	N	Fishing	Fishing	C	Trout Waters
a.Indian Camp Br.	W	N	Fishing	Fishing	C	
b.North Prong Ellijay Creek	W	N	Fishing	Fishing	C	
(1) Wildcat Creek	W	N	Fishing	Fishing	C	
(a) Little Salt Rock Cr.	W	N	Fishing	Fishing	C	
(b) Joe Creek	W	N	Fishing	Fishing	C	
1. Bryson Br.	W	N	Fishing	Fishing	C	
(2) Falls Branch	W	N	Fishing	Fishing	C	
c.Laurel Creek	W	N	Fishing	Fishing	C	
d.Moses Branch	W	N	Fishing	Fishing	C	
e.Battle Branch	W	N	Fishing	Fishing	C	
f.Higdon Branch	W	N	Fishing	Fishing	C	
25.Arnold Branch	W	N	Fishing	Fishing	C	
26.Scott Branch	W	N	Fishing	Fishing	C	
27.Marshburn Branch	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
B-1. Crawford Branch	W	P	Drainage	Drainage	D	Storm Drainage from Town of Franklin
C-1. Rabbit Creek	WF	N	Fishing	Fishing	C	
1. Corbin Creek	W	N	Fishing	Fishing	C	
a. Berry Creek	W	N	Fishing	Fishing	C	
2. Ammons Branch	W	N	Fishing	Fishing	C	
3. Elmore Branch	W	N	Fishing	Fishing	C	
4. Cat Creek	W	N	Fishing	Fishing	C	
D-1. Watauga Creek	WF	N	Fishing	Fishing	C	
1. Hughs Branch	W	N	Fishing	Fishing	C	
2. Brown Creek	W	N	Fishing	Fishing	C	
3. Coon Creek	W	N	Fishing	Fishing	C	
4. Thompson Branch	W	N	Fishing	Fishing	C	
E-1. Trippet Branch	WF	N	Fishing	Fishing	C	
F-1. Rocky Branch	WF	N	Fishing	Fishing	C	
1. Jacob Branch	WF	N	Fishing	Fishing	C	
G-1. Iotla Creek	WF	N	Fishing	Fishing	C	
1. Iotla Branch	WF	N	Fishing	Fishing	C	
2. Poindexter Branch	W	N	Fishing	Fishing	C	
H-1. Mason Branch	WF	N	Fishing	Fishing	C	
I-1. Cowee Creek	WF	N	Fishing	Fishing	C	Trout Waters
1. Mica City Creek	W	N	Fishing	Fishing	C	
a. Fall Branch	W	N	Fishing	Fishing	C	
2. Beasley Creek	W	N	Fishing	Fishing	C	
a. Blazed Creek	W	N	Fishing	Fishing	C	
b. Huckleberry Creek	W	N	Fishing	Fishing	C	
3. Shepherd Creek	W	N	Fishing	Fishing	C	
4. Caler Fork Creek	W	P	WD	Fishing	C	Mining Operation Waste
a. Tippet Creek	W	N	Fishing	Fishing	C	
b. Dalton Creek	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
5. Matlock Creek	W	N	Fishing	Fishing	C	
a. Wests Branch	W	N	Fishing	Fishing	C	
b. Rickman Creek	W	N	Fishing	Fishing	C	
J-1. Carter Branch	WF	N	Fishing	Fishing	C	
K-1. Potts Branch	WF	N	Fishing	Fishing	C	
L-1. Rose Creek	WF	N	Fishing	Fishing	C	
1. Stillhouse Branch	WF	N	Fishing	Fishing	C	
M-1. Bradley Creek	WF	N	Fishing	Fishing	C	
N-1. Lakey Creek	WF	N	Fishing	Fishing	C	
1. Long Branch	W	N	Fishing	Fishing	C	
2. Polecat Branch	W	N	Fishing	Fishing	C	
O-1. Caler Cove Branch	WF	N	Fishing	Fishing	C	
P-1. Long Branch	W	N	Fishing	Fishing	C	
Q-1. Queen Branch	WF	N	Fishing	Fishing	C	
R-1. Burningtown Creek	WF	N	Fishing	Fishing	C	Trout Waters
1. Horse Cove Branch	W	N	Fishing	Fishing	C	
2. Bridge Branch	W	N	Fishing	Fishing	C	
3. Indian Camp Creek	W	N	Fishing	Fishing	C	
a. Joe Dave Branch	W	N	Fishing	Fishing	C	
4. Left Prong	W	N	Fishing	Fishing	C	
a. Ray Branch	W	N	Fishing	Fishing	C	
(1). Right Prong	W	N	Fishing	Fishing	C	
(2). Left Prong	W	N	Fishing	Fishing	C	
b. DeWeese Branch	W	N	Fishing	Fishing	C	
(1). Long Branch	W	N	Fishing	Fishing	C	
5. Downes Branch	W	N	Fishing	Fishing	C	
a. Fall Branch	W	N	Fishing	Fishing	C	
6. Wildes Creek	W	N	Fishing	Fishing	C	
7. Parrish Creek	W	N	Fishing	Fishing	C	
8. Younce Creek	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
a. Daves Creek	W	N	Fishing	Fishing	C	
(1) Edwards Branch	W	N	Fishing	Fishing	C	
9. Allen Branch	W	N	Fishing	Fishing	C	
S-1. Bird Branch	W	N	Fishing	Fishing	C	
T-1. Tellico Creek	W	N	Fishing	Fishing	C	
1. Laurel Branch	W	N	Fishing	Fishing	C	
2. Teague Branch	W	N	Fishing	Fishing	C	
3. Rhinehart Creek	W	N	Fishing	Fishing	C	
a. Gibby Branch	W	N	Fishing	Fishing	C	
U-1. Simon Branch	W	N	Fishing	Fishing	C	
V-1. Ledbetter Branch	W	N	Fishing	Fishing	C	
W-1. Loudermilk Creek	W	N	Fishing	Fishing	C	
X-1. Rattlesnake Creek	W	N	Fishing	Fishing	C	
Y-1. Brush Creek	W	N	Fishing	Fishing	C	
1. Wildcat Branch	W	N	Fishing	Fishing	C	
2. Gibby Branch	W	N	Fishing	Fishing	C	
3. Marr Branch	W	N	Fishing	Fishing	C	
a. Dolph Branch	W	N	Fishing	Fishing	C	
Z-1. Licklog Creek	WF	N	Fishing	Fishing	C	
1. Long Branch	W	N	Fishing	Fishing	C	
A-2. DeHart Creek	W	N	Fishing	Fishing	C	
B-2. Wiggins Creek	W	N	Fishing	Fishing	C	
1. Monkey Branch	W	N	Fishing	Fishing	C	
a. Hurricane Branch	W	N	Fishing	Fishing	C	
2. Charley Branch	W	N	Fishing	Fishing	C	
C-2. Painter Branch	W	N	Fishing	Fishing	C	
D-2. Tarkiln Branch	W	N	Fishing	Fishing	C	
E-2. Cabe Branch	W	N	Fishing	Fishing	C	
F-2. Sawmill Creek	W	N	Fishing	Fishing	C	
1. Hurricane Branch	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
2. Thomason Branch	W	N	Fishing	Fishing	C	
3. Davis Creek	W	N	Fishing	Fishing	C	
G-2. Short Branch	W	N	Fishing	Fishing	C	
H-2. Polebridge Branch	W	N	Fishing	Fishing	C	
II-A. Little Tennessee River from mouth of Nantahala River to upstream side of mouth of Hazel Creek	W	N	Fishing	Rec.	B	
A-1. Nantahala River	W	N-SP	Fishing	Fishing	C	Trout Waters
1. Kirby Creek	W	N	Fishing	Fishing	C	
a. Gulf Fork	W	N	Fishing	Fishing	C	
b. Big Laurel Branch	W	N	Fishing	Fishing	C	
(1) Gulf Branch	W	N	Fishing	Fishing	C	
2. Mooney Creek (Hemp Patch Branch)	W	N	Fishing	Fishing	C	
a. Mooney Branch	W	N	Fishing	Fishing	C	
b. Yellow Patch Branch	W	N	Fishing	Fishing	C	
c. Mountainside Branch	W	N	Fishing	Fishing	C	
3. Bearpen Creek	W	N	Fishing	Fishing	C	
4. Big Indian Creek	W	N	Fishing	Fishing	C	
a. Big Shoal Branch	W	N	Fishing	Fishing	C	
5. Nichols Branch	W	N	Fishing	Fishing	C	
6. Thomas Branch	W	N	Fishing	Fishing	C	
7. Hurricane Creek	W	N	Fishing	Fishing	C	
8. Little Indian Creek	W	N	Fishing	Fishing	C	
a. John Branch	W	N	Fishing	Fishing	C	
9. Curtis Creek	W	N	Fishing	Fishing	C	
10. Kimsey Creek	W	N	Fishing	Fishing	C	
a. Little Lyman Prong	W	N	Fishing	Fishing	C	
b. Devils Prong	W	N	Fishing	Fishing	C	
11. Long Branch	W	N	Fishing	Fishing	C	
a. Wyant Branch	W	N	Fishing	Fishing	C	
12. Laurel Branch	W	N	Fishing	Fishing	C	
13. Little Rock Branch	W	N	Fishing	Fishing	C	
14. Park Creek	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
15. Trough Branch	W	N	Fishing	Fishing	C	
16. Black Creek	W	N	Fishing	Fishing	C	
a. Pat Stable Branch	W	N	Fishing	Fishing	C	
17. Moore Creek	W	N	Fishing	Fishing	C	
18. Bryson Branch	W	N	Fishing	Fishing	C	
a. Siler Bald Branch	W	N	Fishing	Fishing	C	
19. Nova Scotia Branch	W	N	Fishing	Fishing	C	
20. Factory Branch	W	N	Fishing	Fishing	C	
21. Buck Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Little Buck Creek	W	N	Fishing	Fishing	C	
b. Hogan Branch	W	N	Fishing	Fishing	C	
c. Black Branch	W	N	Fishing	Fishing	C	
(1). Bullscrape Br.	W	N	Fishing	Fishing	C	
d. Chestnut Branch	W	N	Fishing	Fishing	C	
e. Glade Branch	W	N	Fishing	Fishing	C	Trout Waters
f. Davenport Branch	W	N	Fishing	Fishing	C	
(1). Johnson Branch	W	N	Fishing	Fishing	C	
g. Barnards Creek	W	N	Fishing	Fishing	C	
(1). Chestnut Br.	W	N	Fishing	Fishing	C	
(2). Fishprong Br.	W	N	Fishing	Fishing	C	
h. Clear Spring Branch	W	N	Fishing	Fishing	C	
i. Thunderstruck Br.	W	N	Fishing	Fishing	C	
22. Roaring Fork	W	N	Fishing	Fishing	C	
23. Tate Branch	W	N	Fishing	Fishing	C	
24. Tyler Branch	W	N	Fishing	Fishing	C	
25. Tipton Branch	W	N	Fishing	Fishing	C	
26. Clear Creek	W	N	Fishing	Fishing	C	
a. Camp Branch	W	N	Fishing	Fishing	C	
b. Stephens Branch	W	N	Fishing	Fishing	C	
27. Jarrett Creek	W	N	Fishing	Fishing	C	Trout Waters

TABLE 10

RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
a. Conley Camp Br.	W	N	Fishing	Fishing	C	
b. Robin Branch	W	N	Fishing	Fishing	C	
c. Dirty John Creek	W	N	Fishing	Fishing	C	
d. Hurricane Creek	W	N	Fishing	Fishing	C	
e. High Laurel Br.	W	N	Fishing	Fishing	C	
f. Arrowhead Branch	W	N	Fishing	Fishing	C	
28. Johnson Branch	W	N	Fishing	Fishing	C	
29. Big Choga Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Blockade Branch	W	N	Fishing	Fishing	C	
b. Gibby Branch	W	N	Fishing	Fishing	C	
c. Wolf Creek	W	N	Fishing	Fishing	C	
d. Chestnut Orchard Br.	W	N	Fishing	Fishing	C	
e. Little Tuni Creek	W	N	Fishing	Fishing	C	
f. Joe Hicks Branch	W	N	Fishing	Fishing	C	
g. May Branch	W	N	Fishing	Fishing	C	
h. Ingram Branch	W	N	Fishing	Fishing	C	
i. Laurel Branch	W	N	Fishing	Fishing	C	
j. Little Choga Cr.	W	N	Fishing	Fishing	C	
(1). Shop Branch	W	N	Fishing	Fishing	C	
(2). Garrison Br.	W	N	Fishing	Fishing	C	
30. Rocky Branch	W	N	Fishing	Fishing	C	
31. Wine Spring Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Bearpen Creek	W	N	Fishing	Fishing	C	
b. Indian Camp Branch	W	N	Fishing	Fishing	C	
32. Lee Branch	W	N	Fishing	Fishing	C	
33. Rowland Branch	W	N	Fishing	Fishing	C	
34. Dicks Creek	W	N	Fishing	Fishing	C	
a. Pine Branch	W	N	Fishing	Fishing	C	
(1). Matherson Br.	W	N	Fishing	Fishing	C	
b. Hickory Branch	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
c. Youngs Camp Br.	W	N	Fishing	Fishing	C	
35. Appletree Branch	W	N	Fishing	Fishing	C	
36. Beech Cove Branch	W	N	Fishing	Fishing	C	
37. Whiteoak Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Big Laurel Creek	W	N	Fishing	Fishing	C	
b. Little Laurel Cr.	W	N	Fishing	Fishing	C	
c. Rocky Bald Branch	W	N	Fishing	Fishing	C	
d. Kit Spring Branch	W	N	Fishing	Fishing	C	
e. Split Whiteoak Br.	W	N	Fishing	Fishing	C	
f. Sassafras Branch	W	N	Fishing	Fishing	C	
g. Holloway Branch	W	N	Fishing	Fishing	C	
h. Cold Spring Creek	W	N	Fishing	Fishing	C	
(1). Big Branch	W	N	Fishing	Fishing	C	
(a). Dry Br.	W	N	Fishing	Fishing	C	
(2). Middle Branch	W	N	Fishing	Fishing	C	
(a). Buringtown Branch	W	N	Fishing	Fishing	C	
(3). Larry Brush Br.	W	N	Fishing	Fishing	C	
(4). Ben Creek	W	N	Fishing	Fishing	C	
(5). Batey Branch	W	N	Fishing	Fishing	C	
(6). Gold Pit Creek	W	N	Fishing	Fishing	C	
(7). Bateman Br.	W	N	Fishing	Fishing	C	
i. Long Branch	W	N	Fishing	Fishing	C	
j. Otter Creek	W	N	Fishing	Fishing	C	
(1). Sawmill Br.	W	N	Fishing	Fishing	C	
(2). Jane Otter Br.	W	N	Fishing	Fishing	C	
(3). Cherry Branch	W	N	Fishing	Fishing	C	
k. Partridge Creek	W	N	Fishing	Fishing	C	
(1). Left Fork	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(2). Hampton Br.	W	N	Fishing	Fishing	C	
38. Camp Branch	W	N	Fishing	Fishing	C	
39. Piercy Creek	W	N	Fishing	Fishing	C	
40. Rowlin Creek	W	N	Fishing	Fishing	C	
a. Laurel Branch	W	N	Fishing	Fishing	C	
41. Handpole Branch	W	N	Fishing	Fishing	C	
42. Ledbetter Creek	W	N	Fishing	Fishing	C	
43. Queens Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Appletree Branch	W	N	Fishing	Fishing	C	
b. Grassy Branch	W	N	Fishing	Fishing	C	
c. Clear Branch	W	N	Fishing	Fishing	C	
d. Jarrett Camp Br.	W	N	Fishing	Fishing	C	
44. Mudcut Branch	W	N	Fishing	Fishing	C	
45. Talc Mountain Br.	W	N	Fishing	Fishing	C	
46. Morris Branch	W	N	Fishing	Fishing	C	
47. Silvermine Creek	W	N	Fishing	Fishing	C	
a. Fall Branch	W	N	Fishing	Fishing	C	
b. Lettuce Branch	W	N	Fishing	Fishing	C	
c. Scald Branch	W	N	Fishing	Fishing	C	
d. Bee Branch	W	N	Fishing	Fishing	C	
e. Grassy Branch	W	N	Fishing	Fishing	C	
f. Big Creek	W	N	Fishing	Fishing	C	
g. Blacksnake Branch	W	N	Fishing	Fishing	C	
48. Wesser Creek	W	N	Fishing	Fishing	C	
a. Bald Branch	W	N	Fishing	Fishing	C	
b. DeHart Branch	W	N	Fishing	Fishing	C	
c. Right Fork	W	N	Fishing	Fishing	C	
d. Tothrow Branch	W	N	Fishing	Fishing	C	
49. Townhouse Branch	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
50. Bird Falls Branch	W	N	Fishing	Fishing	C	
51. Euchulla Branch	W	N	Fishing	Fishing	C	
52. Watia Creek	W	N	Fishing	Fishing	C	
a. Duck Branch	W	N	Fishing	Fishing	C	
53. Buckner Branch	W	N	Fishing	Fishing	C	
54. Jake Branch	W	N	Fishing	Fishing	C	
55. Siles Branch	W	N	Fishing	Fishing	C	
a. Long Branch	W	N	Fishing	Fishing	C	
56. Pump Branch	W	N	Fishing	Fishing	C	
57. Turkey Creek	W	N	Fishing	Fishing	C	
B-1. Ammons Branch	W	N	Fishing	Fishing	C	
C-1. Alarka Creek	W	N	Fishing	Fishing	C	Trout Waters
1. Cold Spring Branch	W	N	Fishing	Fishing	C	
2. Upper Long Creek	W	N	Fishing	Fishing	C	
3. Bearmeat Branch	W	N	Fishing	Fishing	C	
4. Falls Branch	W	N	Fishing	Fishing	C	
5. Mason Branch	W	N	Fishing	Fishing	C	
6. Little Laurel Creek	W	N	Fishing	Fishing	C	
7. Una Creek	W	N	Fishing	Fishing	C	
a. Piney Wood Creek	W	N	Fishing	Fishing	C	
b. Long Creek	W	N	Fishing	Fishing	C	
c. Hickorynut Branch	W	N	Fishing	Fishing	C	
8. Second Hurricane Branch	W	N	Fishing	Fishing	C	
9. First Hurricane Branch	W	N	Fishing	Fishing	C	
10. Pigeon Creek	W	N	Fishing	Fishing	C	
11. Bowers Creek	W	N	Fishing	Fishing	C	
a. Jones Creek	W	N	Fishing	Fishing	C	
b. Cullasaja Creek	W	N	Fishing	Fishing	C	
12. Battle Creek	W	N	Fishing	Fishing	C	
13. Little Alarka Creek	W	N	Fishing	Fishing	C	
14. DeHart Branch	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
a. Frisbee Br.	W	N	Fishing	Fishing	C	
15. Robinson Gap Branch	W	N	Fishing	Fishing	C	
16. Welch Branch	W	N	Fishing	Fishing	C	
17. Davis Branch	W	N	Fishing	Fishing	C	
18. Dark Branch	W	N	Fishing	Fishing	C	
19. Grant Branch	W	N	Fishing	Fishing	C	
20. Grassy Branch	W	N	Fishing	Fishing	C	
D-1. Greasy Branch	W	N	Fishing	Fishing	C	
1. Stevenson Branch	W	N	Fishing	Fishing	C	
a. Barnett Branch	W	N	Fishing	Fishing	C	
E-1. Battles Branch	W	N	Fishing	Fishing	C	
F-1. Fishtrap Branch	W	N	Fishing	Fishing	C	
G-1. Watertank Branch	W	N	Fishing	Fishing	C	
H-1. Meadow Branch	W	N	Fishing	Fishing	C	
I-1. Tuckasegee River to mouth of Scott Creek	WF & PA	N-P	Fishing	Fishing	C	
1. Panthertown Creek	W	N	Fishing	Fishing	C	
a. Frolictown Creek	W	N	Fishing	Fishing	C	
(1). Goldspring Br.	W	N	Fishing	Fishing	C	
2. Greenland Creek	W	N	Fishing	Fishing	C	
3. Little Green Creek	W	N	Fishing	Fishing	C	
4. Honeycamp Branch	W	N	Fishing	Fishing	C	
5. Bracken Creek	W	N	Fishing	Fishing	C	
6. Tennessee Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Cold Creek	W	N	Fishing	Fishing	C	
7. Slickens Creek	W	N	Fishing	Fishing	C	
8. Doe Branch	W	N	Fishing	Fishing	C	
9. Wolf Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Yellow Patch Br.	W	N	Fishing	Fishing	C	
b. Gage Creek	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
c. Cold Creek	W	N	Fishing	Fishing	C	
d. Charley Creek	W	N	Fishing	Fishing	C	
(1). Cub Branch	W	N	Fishing	Fishing	C	
e. Long Branch	W	N	Fishing	Fishing	C	
10. Neddie Creek	W	N	Fishing	Fishing	C	
11. Flat Creek	W	N	Fishing	Fishing	C	
12. Sols Creek	W	N	Fishing	Fishing	C	
a. Jeff Creek	W	N	Fishing	Fishing	C	
13. Robinson Creek	W	N	Fishing	Fishing	C	
a. Packs Creek	W	N	Fishing	Fishing	C	
b. Mill Creek	W	N	Fishing	Fishing	C	
(1). Shelton Cr.	W	N	Fishing	Fishing	C	
(2). Cow Mountain Creek	W	N	Fishing	Fishing	C	
c. Ell Branch	W	N	Fishing	Fishing	C	
d. Big Laurel Br.	W	N	Fishing	Fishing	C	
e. Slatten Branch	W	N	Fishing	Fishing	C	
14. Big Branch	W	N	Fishing	Fishing	C	
15. Em Branch	W	N	Fishing	Fishing	C	
16. Gladie Creek	W	N	Fishing	Fishing	C	
17. Bear Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Bearpen Branch	W	N	Fishing	Fishing	C	
18. Turkey Branch	W	N	Fishing	Fishing	C	
19. Kiesee Creek	W	N	Fishing	Fishing	C	
20. Niggerskull Creek	W	N	Fishing	Fishing	C	
21. Canoe Creek	W	N	Fishing	Fishing	C	
22. Woods Branch	W	N	Fishing	Fishing	C	
23. West Fork Tuckasegee River	WF	N	Fishing	Fishing	C	Trout Waters below Glenville Lake Dam
a. Hurricane Creek	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(1). Laurel Br.	W	N	Fishing	Fishing	C	
b. Cedar Creek	W	N	Fishing	Fishing	C	
(1). Grassyrock Creek	W	N	Fishing	Fishing	C	
(2). Sheep Cliff Creek	W	N	Fishing	Fishing	C	
(3). Beetree Cr.	W	N	Fishing	Fishing	C	
c. Grassy Camp Creek	W	N	Fishing	Fishing	C	
(1). Shortoff Cr.	W	N	Fishing	Fishing	C	
(2). Norton Cr.	W	N	Fishing	Fishing	C	Trout Waters
(3). Knob Cr.	W	N	Fishing	Fishing	C	
d. Mill Creek	W	N	Fishing	Fishing	C	
(1). Flat Cr.	W	N	Fishing	Fishing	C	
e. Pine Creek	W	N	Fishing	Fishing	C	
(1). Jackson Cr.	W	N	Fishing	Fishing	C	
(2). Taylor Cr.	W	N	Fishing	Fishing	C	
(3). Little Pine Creek	W	N	Fishing	Fishing	C	
(a) Gem Cr.	W	N	Fishing	Fishing	C	
f. Rough Run	W	N	Fishing	Fishing	C	
g. Coggins Creek	W	N	Fishing	Fishing	C	
h. Shoal Creek	W	N	Fishing	Fishing	C	
i. Hunter Jim Cr.	W	N	Fishing	Fishing	C	
j. Trout Creek	W	N	Fishing	Fishing	C	
(1). Raven Fork	W	N	Fishing	Fishing	C	
(2). Little Trout Creek	W	N	Fishing	Fishing	C	
(a) Bell Coney Branch	W	N	Fishing	Fishing	C	
(3). Betsy Branch	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
k. Grassy Creek	W	N	Fishing	Fishing	C	
l. Little Mill Cr.	W	N	Fishing	Fishing	C	
m. Dickson Creek	W	N	Fishing	Fishing	C	
n. Mill Creek	W	N	Fishing	Fishing	C	
24. Mine Branch	W	N	Fishing	Fishing	C	
25. John Brown Branch	W	N	Fishing	Fishing	C	
26. Webster Creek	W	N	Fishing	Fishing	C	
27. Caney Fork	W.F	N	Fishing	Fishing	C	Trout Waters
a. Piney Mountain Creek	W	N	Fishing	Fishing	C	
(1) Bearwallow Cr.	W	N	Fishing	Fishing	C	
(a) Chestnut Ridge Cr.	W	N	Fishing	Fishing	C	
(b) Birch Ridge Creek	W	N	Fishing	Fishing	C	
b. Rough Butt Cr.	W	N	Fishing	Fishing	C	
c. Mull Creek	W	N	Fishing	Fishing	C	Trout Waters
(1) Coppermine Cr.	W	N	Fishing	Fishing	C	
(2) Beechflat Cr.	W	N	Fishing	Fishing	C	
d. Sugar Creek	W	N	Fishing	Fishing	C	
(1) Dryland Laurel Branch	W	N	Fishing	Fishing	C	
e. Chastine Cr.	W	N	Fishing	Fishing	C	
(1) Craig Cr.	W	N	Fishing	Fishing	C	
(2) Frady Creek	W	N	Fishing	Fishing	C	
f. Abbs Creek	W	N	Fishing	Fishing	C	
g. Johns Creek	W	N	Fishing	Fishing	C	
(1) Rich Mountain Branch	W	N	Fishing	Fishing	C	
h. Moses Creek	W	N	Fishing	Fishing	C	Trout Waters

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(1) East Fork	W	N	Fishing	Fishing	C	
(2) West Fork	W	N	Fishing	Fishing	C	
a. Indian Camp Branch	W	N	Fishing	Fishing	C	
28. Wayehutta Creek	W	N	Fishing	Fishing	C	
a. Rocky Face Br.	W	N	Fishing	Fishing	C	
29. Cullowhee Creek	WF & PA	N-P	Fishing & WD	Fishing	C	Trout Waters DS from Western Carolina College
a. Whiterock Cr. to proposed intake for Western Carolina College Water Supply	W	N	Fishing	W.S.	A-I	Western Carolina College proposed Watershed
b. Whiterock Cr. from proposed intake for Western Carolina College Water Supply to mouth	W	N	Fishing	Fishing	C	
(1) Dodgen Cr.	W	N	Fishing	Fishing	C	
c. Wilson Creek	W	N	Fishing	Fishing	C	
d. Wolf Cr. to proposed intake for Western Carolina College Water Supply	W	N	Fishing	W.S.	A-I	Western Carolina College proposed Watershed
e. Wolf Cr. from proposed intake for Western Carolina College Water Supply to mouth	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
f. Cherry Gap Br.	W	N	Fishing	Fishing	C	
g. Tilley Creek	WF	SP	Fishing	Fishing	C	Private Outfalls
(1) Flat Br. to Western Carolina College Water Supply intake	W	N	W.S.	W.S.	A-I	Western Carolina College Watershed
(2) Flat Br. from Western Carolina College Water Supply intake to mouth	W	N	Fishing	Fishing	C	
(3) Pressley Cr.	W	N	Fishing	Fishing	C	
(a) Parker Br.	W	N	Fishing	Fishing	C	
(4) Bryson Br.	W	N	Fishing	Fishing	C	
h. Long Br. to Western Carolina College Water Supply intake	W	N	W.S.	W.S.	A-I	Western Carolina College Watershed
i. Long Br. from Western Carolina College Water Supply intake to mouth	WF	SP	Fishing	Fishing	C	Private Outfalls
30. Cane Creek	WF	N	Fishing	Fishing	C	
31. Ash Branch	WF	N	Fishing	Fishing	C	
32. Locust Creek	WF	N	Fishing	Fishing	C	
33. Mill Creek	WF	SP	Fishing	Fishing	C	Private Outfalls from Town of Webster
a. Bumgarner Br.	WF	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
34. Savannah Creek	WF	N-SP	Fishing	Fishing	C	Trout Waters
a. Shell Branch	WF	N	Fishing	Fishing	C	
b. Long Branch	W	N	Fishing	Fishing	C	
c. Hornbuckle Br.	W	N	Fishing	Fishing	C	
(1) Sassafras Br.	W	N	Fishing	Fishing	C	
d. Sugar Branch	W	N	Fishing	Fishing	C	
e. Betty Branch	W	N	Fishing	Fishing	C	
f. Rhoda Branch	W	N	Fishing	Fishing	C	
g. Tatham Creek	W	N	Fishing	Fishing	C	
h. East Fork Savannah Creek	WF	N	Fishing	Fishing	C	Trout Waters
i. Reed Branch	W	N	Fishing	Fishing	C	
j. Deets Creek	W	N	Fishing	Fishing	C	
k. Greens Creek	W	N	Fishing	Fishing	C	Trout Waters
(1) Sugar Fork	W	N	Fishing	Fishing	C	
(2) Peewee Br.	W	N	Fishing	Fishing	C	
(3) Brushy Fork	W	N	Fishing	Fishing	C	
(4) Brook Branch	W	N	Fishing	Fishing	C	
l. Sutton Branch	W	N	Fishing	Fishing	C	
m. Cagle Branch	W	N	Fishing	Fishing	C	
n. Little Savannah Cr.	W	N	Fishing	Fishing	C	
(1) Blake Branch	WF	N	Fishing	Fishing	C	
35. Yellow Bird Br.	WF	N	Fishing	Fishing	C	
J-1. Tuckasegee R. from mouth of Scott Cr. to Barkers Cr. Bridge	WF	P	WD	Fish Survival	D	
1. Scott Cr. to Harold Street Bridge at Sylva	WF	N-P	Fishing & WD	Fishing	C	Trout Waters. Private Outfalls and gravel-washing waste

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
a. Woodfin Creek	WF	N	Fishing	Fishing	C	
b. Carson Branch	WF	N	Fishing	Fishing	C	
c. Dark Ridge Cr.	W	N	Fishing	Fishing	C	
(1) Queen Camp Cr.	W	N	Fishing	Fishing	C	
(2) Flint Spring Cr.	W	N	Fishing	Fishing	C	
(3) Doubletop Cr.	W	N	Fishing	Fishing	C	
(4) Cabin Creek	W	N	Fishing	Fishing	C	
(5) Jones Creek	W	N	Fishing	Fishing	C	
(6) Licklog Creek	W	N	Fishing	Fishing	C	
d. Cashie Branch	W	N	Fishing	Fishing	C	
e. Soapstone Creek	WF	N	Fishing	Fishing	C	
(1) Sugarloaf Cr.	W	N	Fishing	Fishing	C	
(a) South Fork Sugarloaf Cr.	W	N	Fishing	Fishing	C	
f. North Fork	W	N	Fishing	Fishing	C	
g. Buff Creek	WF	N	Fishing	Fishing	C	Trout Waters
(1) Henry Creek	W	N	Fishing	Fishing	C	
h. Ochre Creek	WF	N	Fishing	Fishing	C	
(1) Blanton Branch	WF	N	Fishing	Fishing	C	
i. Fisher Cr. to Sylva Water Supply intake	W	N	W.S.	W.S.	A-I	Town of Sylva Watershed
j. Fisher Cr. from Sylva Water Supply intake to mouth	WF	N	Fishing	Fishing	C	
(1) Dills Cr. to Sylva Water Supply intake	W	N	W.S.	W.S.	A-I	Town of Sylva Watershed
(2) Dills Cr. from Sylva Water Supply intake to mouth	WF	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
k. Monteith Creek	WF	N	Fishing	Fishing	C	
l. Kitchin Creek	WF	N	Fishing	Fishing	C	
m. Allens Branch	WF	N	Agri.	Agri.	D	Drainage from Sylva Area
2. Scott Cr. from Harold Street Bridge at Sylva to mouth**	PA	GP	WD	WD	E	D.S. from Sylva & Dillsboro & Sewage and I.W. from Mead Corp.
a. Cope Creek	PA & F	P	Agri. & Drainage	Agri. & Drainage	D	Drainage from Sylva Area
b. Dills Branch	PA & F	N	Agri. & Drainage	Agri. & Drainage	D	Drainage from Sylva Area
3. Mack Town Branch	WF	N	Fishing	Fishing	C	
4. Long Branch	WF	N	Fishing	Fishing	C	
a. Mince Branch	WF	N	Fishing	Fishing	C	
5. Dicks Creek	WF	N	Fishing	Fishing	C	Trout Waters
a. West Fork Dicks Cr.	WF	N	Fishing	Fishing	C	
(1) Ned Branch	W	N	Fishing	Fishing	C	
b. East Fork Dicks Cr.	W	N	Fishing	Fishing	C	
6. Laurel Branch	W	N	Fishing	Fishing	C	
K-1. Tuckasegee R. from Barkers Cr. Bridge to mouth of Noland Cr.	WF	P	WD	Fishing	C	
1. Barkers Creek	WF	N	Fishing	Fishing	C	Trout Waters
a. West Fork	WF	N	Fishing	Fishing	C	
b. Middle Fork	WF	N	Fishing	Fishing	C	
c. East Fork	WF	N	Fishing	Fishing	C	
2. Jacks Creek	WF	N	Fishing	Fishing	C	
3. Cane Branch	WF	N	Fishing	Fishing	C	
4. Nations Creek	WF	N	Fishing	Fishing	C	
a. Joe Branch	WF	N	Fishing	Fishing	C	

** All tributaries to the segment of Scott Creek which is classified "E" will carry the classification "D" unless otherwise noted.

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
5. Rocky Branch	WF	N	Fishing	Fishing	C	
6. Camp Creek	WF	N	Fishing	Fishing	C	
7. Crooked Creek	WF	N	Fishing	Fishing	C	
8. Lewis Branch	WF	N	Fishing	Fishing	C	
9. Connelly Creek	WF	N	Fishing	Fishing	C	
a. Grassy Branch	W	N	Fishing	Fishing	C	
b. Slipoff Branch	W	N	Fishing	Fishing	C	
c. Camp Branch	WF	N	Fishing	Fishing	C	
d. Chestnut Cove Creek	WF	N	Fishing	Fishing	C	
(1) Deep Gap Cr.	W	N	Fishing	Fishing	C	
e. Wesser Creek	WF	N	Fishing	Fishing	C	
(1) Williams Branch	W	N	Fishing	Fishing	C	
(2) Improvement Cr.	WF	N	Fishing	Fishing	C	
f. Moore Branch	W	N	Fishing	Fishing	C	
10. Fishtrap Branch	W	N	Fishing	Fishing	C	
11. Oconaluftee River	WF & PA	N-P	Fishing	Fishing	C	Trout Waters - D.S. Cherokee Sewage Treatment Plant
a. Beech Flats Fork to mouth of Collins Cr.	W	N	Fishing	Fishing	C	Trout Waters
(1) Beech Flats Prong	W	N	Fishing	Fishing	C	Trout Waters
(a) Huskey Cr.	W	N	Fishing	Fishing	C	Trout Waters
1 Aden Br.	W	N	Fishing	Fishing	C	Trout Waters
(b) Jack Bradley Branch	W	N	Fishing	Fishing	C	Trout Waters
(c) Wild Cherry Creek	W	N	Fishing	Fishing	C	Trout Waters
(d) Kanati Fork	W	N	Fishing	Fishing	C	Trout Waters
(2) Kephart Prong	W	N	Fishing	Fishing	C	Trout Waters
(a) Lower Grassy Branch	W	N	Fishing	Fishing	C	Trout Waters

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(3) Smith Branch	W	N	Fishing	Fishing	C	
(4) Cliff Branch	W	N	Fishing	Fishing	C	
(5) Hickory Flat Br.	W	N	Fishing	Fishing	C	Trout Waters
(6) Will Branch	W	N	Fishing	Fishing	C	Trout Waters
b. Beech Flats Fork from mouth of Collins Creek to mouth	W	N	Bathing	Bathing	B	Trout Waters - Smokemont Bathing Area (Camp Ground)
(1) Collins Creek	W	N	Fishing	Fishing	C	Trout Waters
c. Bradley Fork to mouth of Chasteen Creek	W	N	Fishing	Fishing	C	Trout Waters
(1) Chasm Prong	W	N	Fishing	Fishing	C	Trout Waters
(2) Gulf Prong	W	N	Fishing	Fishing	C	Trout Waters
(3) Bearwallow Br.	W	N	Fishing	Fishing	C	Trout Waters
(4) Cabin Branch	W	N	Fishing	Fishing	C	Trout Waters
(5) Louie Camp Br.	W	N	Fishing	Fishing	C	Trout Waters
(6) Tennessee Br.	W	N	Fishing	Fishing	C	Trout Waters
(7) Taywa Creek	W	N	Fishing	Fishing	C	Trout Waters
(8) Tabor Branch	W	N	Fishing	Fishing	C	Trout Waters
d. Bradley Fork from mouth of Chasteen Cr. to mouth	W	N	Bathing	Bathing	B	Trout Waters - Smokemont Bathing Area (Camp Ground)
(1) Chasteen Cr.	W	N	Fishing	Fishing	C	Trout Waters
e. Becks Branch	W	N	Fishing	Fishing	C	Trout Waters
f. Tow String Cr.	W	N	Fishing	Fishing	C	Trout Waters
g. Couches Creek	W	N	Fishing	Fishing	C	Trout Waters
h. Mingus Cr. to Cherokee Water Supply intake	W	N	W.S.	W.S.	A-I	Trout Waters - Cherokee Watershed

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
i. Mingus Cr. from Cherokee Water Supply intake to mouth	W	N	Fishing	Fishing	C	Trout Waters
j. Raven Fork to mouth of Jones Cr.	W	N	Fishing	Fishing	C	Trout Waters
(1) Left Fork	W	N	Fishing	Fishing	C	Trout Waters
(2) Middle Fork	W	N	Fishing	Fishing	C	Trout Waters
(3) Right Fork	W	N	Fishing	Fishing	C	Trout Waters
(a) Thicket Br.	W	N	Fishing	Fishing	C	Trout Waters
(4) Yellow Branch	W	N	Fishing	Fishing	C	Trout Waters
(5) Buckeye Branch	W	N	Fishing	Fishing	C	Trout Waters
(6) Bulldie Creek	W	N	Fishing	Fishing	C	Trout Waters
(a) Breedlove Br.	W	N	Fishing	Fishing	C	Trout Waters
1 Weaver Br.	W	N	Fishing	Fishing	C	Trout Waters
(7) Simmons Branch	W	N	Fishing	Fishing	C	Trout Waters
k. Raven Fork from mouth of Jones Cr. to ½ mi. above mouth of Straight Fork	W	N	Bathing	Bathing	B	Trout Waters - Big Cove Ranch Bathing Area
(1) Enloe Creek	W	N	Fishing	Fishing	C	Trout Waters
(a) Big Br.	W	N	Fishing	Fishing	C	Trout Waters
(2) Balsam Branch	W	N	Fishing	Fishing	C	Trout Waters
l. Raven Fork from ½ mile above mouth of Straight Fork to mouth	W	N	Fishing	Fishing	C	Trout Waters
(1) Straight Fork	W	N	Fishing	Fishing	C	Trout Waters
(a) Teds Br.	W	N	Fishing	Fishing	C	Trout Waters

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(b) Big Head Br.	W	N	Fishing	Fishing	C	Trout Waters
(c) Dans Creek	W	N	Fishing	Fishing	C	Trout Waters
(d) Roses Branch	W	N	Fishing	Fishing	C	Trout Waters
(e) Balsam Corner Creek	W	N	Fishing	Fishing	C	Trout Waters
1 Laurel Gap Branch	W	N	Fishing	Fishing	C	Trout Waters
(f) Trap Branch	W	N	Fishing	Fishing	C	Trout Waters
(g) Lynn Branch	W	N	Fishing	Fishing	C	Trout Waters
(h) Table Rock Branch	W	N	Fishing	Fishing	C	Trout Waters
(i) Ledge Creek	W	N	Fishing	Fishing	C	Trout Waters
1 Right Prong	W	N	Fishing	Fishing	C	Trout Waters
(j) Round Bottom Creek	W	N	Bathing	Bathing	B	Trout Waters - Round Bottom Camp Bathing Area
(k) Hyatt Creek	W	N	Fishing	Fishing	C	Trout Waters
(l) Rock Camp Run	W	N	Fishing	Fishing	C	Trout Waters
(m) Quillaree Br.	W	N	Fishing	Fishing	C	Trout Waters
(n) Skidder Br.	W	N	Fishing	Fishing	C	Trout Waters
(o) McGee Br.	W	N	Fishing	Fishing	C	Trout Waters
(p) Stillwell Cr.	W	N	Fishing	Fishing	C	Trout Waters
(2) Bunches Cr. to National Park Service Water intake	W	N	W.S.	W.S.	A-I	Trout Waters - National Park Service Watershed
(3) Bunches Cr. from National Park Service Water intake to mouth	W	N	Fishing	Fishing	C	Trout Waters

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(a) Flat Cr.	W	N	Fishing	Fishing	C	Trout Waters
(b) Rock Camp Br.	W	N	Fishing	Fishing	C	Trout Waters
(c) Pleasant Br.	W	N	Fishing	Fishing	C	Trout Waters
(d) Madcap Br.	W	N	Fishing	Fishing	C	Trout Waters
(e) Spread Br.	W	N	Fishing	Fishing	C	Trout Waters
(f) Selma Cr.	W	N	Fishing	Fishing	C	Trout Waters
(g) Flat Bald Br.	W	N	Fishing	Fishing	C	Trout Waters
(h) Heintooja Cr.	W	N	Fishing	Fishing	C	Trout Waters
(i) Moody Branch	W	N	Fishing	Fishing	C	Trout Waters
(j) Broad Cove Branch	W	N	Fishing	Fishing	C	Trout Waters
(k) Redman Cr.	W	N	Fishing	Fishing	C	Trout Waters
1 Left Fork	W	N	Fishing	Fishing	C	Trout Waters
2 Right Fork	W	N	Fishing	Fishing	C	Trout Waters
(l) Tunergh Br.	W	N	Fishing	Fishing	C	
(4) Galmore Branch	W	N	Fishing	Fishing	C	
(5) Soggy Hill Br.	W	N	Fishing	Fishing	C	
(6) Pigeon Creek	W	N	Fishing	Fishing	C	
(7) Mingo Creek	W	N	Fishing	Fishing	C	
(8) Sherrill Cove Br.	W	N	Fishing	Fishing	C	
(9) Poplar Hallow Br.	W	N	Fishing	Fishing	C	
m. Grassy Branch	W	N	Fishing	Fishing	C	
n. Lambert Branch	W	N	Fishing	Fishing	C	
o. Owl Branch (East side Oconaluftee R.)	WF	N	Fishing	Fishing	C	
p. Soco Creek	WF	N	Fishing	Fishing	C	
(1) Rough Branch	WF	N	Fishing	Fishing	C	
(2) Lost Cove Branch	WF	N	Fishing	Fishing	C	
(3) Hornbuckle Cr.	WF	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(a) Open Br.	WF	N	Fishing	Fishing	C	
(b) Cherry Orchard Branch	WF	N	Fishing	Fishing	C	
(c) Cranberry Cr.	WF	N	Fishing	Fishing	C	
(d) Rough Br.	WF	N	Fishing	Fishing	C	
(e) Polecat Br.	WF	N	Fishing	Fishing	C	
(4) Blackrock Cr.	WF	N	Fishing	Fishing	C	
(5) Shut-in Creek	WF	N	Fishing	Fishing	C	
(6) Jenkins Creek	WF	N	Fishing	Fishing	C	
(a) West Fork Jenkins Cr.	WF	N	Fishing	Fishing	C	
(b) East Fork Jenkins Cr.	WF	N	Fishing	Fishing	C	
(7) Indian Creek	WF	N	Fishing	Fishing	C	
(8) Washington Cr.	WF	N	Fishing	Fishing	C	
(9) Adams Branch	WF	N	Fishing	Fishing	C	
(10) Wrights Creek	WF	N	Fishing	Fishing	C	
(a) Mainey Br.	WF	N	Fishing	Fishing	C	
(b) Bradley Br.	WF	N	Fishing	Fishing	C	
(c) Big Witch Cr.	WF	N	Fishing	Fishing	C	
(d) Mink Branch	WF	N	Fishing	Fishing	C	
(e) Swimmers Br.	WF	N	Fishing	Fishing	C	
(11) Stillwell Br.	WF	N	Fishing	Fishing	C	
(12) Shoal Creek	WF	N	Fishing	Fishing	C	
q. Owl Br. (North side Oconaluftee River)	WF	N	Fishing	Fishing	C	Trout Waters
r. Adams Creek	WF	N	Fishing	Fishing	C	
s. Gibbs Branch	WF	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
t. Goose Creek	WF	N	Fishing	Fishing	C	
u. McHan Branch	WF	N-SP	Fishing	Fishing	C	Private Outfalls
12. Cooper Creek	WF	N-SP	Fishing	Fishing	C	Trout Waters - Private Outfalls
a. Wiggins Branch	W	N	Fishing	Fishing	C	
13. Galbreath Creek	WF	N-SP	Fishing	Fishing	C	Private Outfalls
a. Worley Branch	WF	N	Fishing	Fishing	C	
14. Falls Branch	W	N	Fishing	Fishing	C	
15. Johnson Branch	WF	N-SP	Fishing	Fishing	C	Private Outfalls
16. Maple Branch	W	N-SP	Fishing	Fishing	C	Private Outfalls
17. Kirkland Creek	WF	N	Fishing	Fishing	C	Trout Waters
a. West Fork	WF	N-SP	Fishing	Fishing	C	Private Outfalls
b. East Fork	WF	N-SP	Fishing	Fishing	C	Private Outfalls
c. Shephard Creek	WF	N-SP	Fishing	Fishing	C	Private Outfalls
18. Scarred Branch	W	N	Fishing	Fishing	C	
19. Deep Cr. to mouth of Indian Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Right Fork	W	N	Fishing	Fishing	C	Trout Waters
(1) Shalee Cr.	W	N	Fishing	Fishing	C	Trout Waters
(2) Rock Fork	W	N	Fishing	Fishing	C	Trout Waters
(3) Cherry Creek	W	N	Fishing	Fishing	C	Trout Waters
(4) Beartree Creek	W	N	Fishing	Fishing	C	Trout Waters
(5) Nettle Creek	W	N	Fishing	Fishing	C	Trout Waters
b. Left Fork	W	N	Fishing	Fishing	C	Trout Waters
(1) Keg Drive Br.	W	N	Fishing	Fishing	C	Trout Waters
(2) Bearpen Br.	W	N	Fishing	Fishing	C	Trout Waters
c. Pole Road Creek	W	N	Fishing	Fishing	C	Trout Waters
d. Elliot Cove Cr.	W	N	Fishing	Fishing	C	Trout Waters
e. Bridge Creek	W	N	Fishing	Fishing	C	Trout Waters

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(1) Left Prong	W	N	Fishing	Fishing	C	Trout Waters
f. Bumgardner Branch	W	N	Fishing	Fishing	C	Trout Waters
g. Hammer Branch	W	N	Fishing	Fishing	C	Trout Waters
20. Deep Cr. from mouth of Indian Cr. to Great Smoky Mountains National Park Boundary	W	N	Bathing	Bathing	B	Trout Waters - Deep Cr. Camp Ground Bathing Area
a. Indian Creek	W	N	Fishing	Fishing	C	Trout Waters
(1) Left Fork	W	N	Fishing	Fishing	C	Trout Waters
(2) Right Fork	W	N	Fishing	Fishing	C	Trout Waters
(3) Estes Branch	W	N	Fishing	Fishing	C	Trout Waters
(4) Georges Branch	W	N	Fishing	Fishing	C	Trout Waters
b. Tom Branch	W	N	Fishing	Fishing	C	Trout Waters
c. Juney Whank Br. to National Park Service Water Supply intake	W	N	W.S.	W.S.	A-I	Trout Waters - National Park Service Watershed
d. Juney Whank Br. from National Park Service Water Supply intake to mouth	W	N	Fishing	Fishing	C	Trout Waters -
e. Durham Branch	W	N	Fishing	Fishing	C	
21. Deep Cr. from Great Smoky Mountains National Park Boundary to mouth	W	N-SP	Fishing	Fishing	C	Private Outfalls
a. Betts Branch	WF	N-SP	Fishing	Fishing	C	Private Outfalls
22. Toot Hollow Branch	WF & PA	N	Agri.	Agri.	D	Drainage from Bryson City
a. Bryson Branch	WF & PA	N	Agri.	Agri.	D	Drainage from Bryson City Area

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
23. Hughes Branch	WF	N	Agri.	Agri.	D	
24. Jenkins Br. to Bryson City Water Supply intake	W	N	W.S.	W.S.	A-I	Bryson City Watershed
25. Jenkins Br. from Bryson City Water Supply intake to mouth	WF	N	Agri.	Agri.	D	
26. Cochran Branch	WF	N	Fishing	Fishing	C	
27. Buckner Branch	WF	N	Fishing	Fishing	C	
a. Gibby Branch	WF	N	Fishing	Fishing	C	
b. Messer Branch	WF	N	Fishing	Fishing	C	
28. Watkins Branch	WF	N	Fishing	Fishing	C	
29. Mountain Branch	W	N	Fishing	Fishing	C	
30. Lands Cr. to Bryson City Water Supply intake	W	N	W.S.	W.S.	A-I	Bryson City Watershed
a. Long Branch	W	N	W.S.	W.S.	A-I	Bryson City Watershed
31. Lands Cr. from Bryson City Water Supply intake to mouth	WF	N	Fishing	Fishing	C	
a. Silvermine Branch	W	N	Fishing	Fishing	C	
32. Laurel Branch	W	N	Fishing	Fishing	C	
33. Peachtree Creek	W	N	Fishing	Fishing	C	
a. Middle Peachtree Cr.	W	N	Fishing	Fishing	C	
34. Little Peachtree Cr.	W	N	Fishing	Fishing	C	
35. Canebrake Branch	W	N	Fishing	Fishing	C	
36. Hickory Flat Branch	W	N	Fishing	Fishing	C	
L-1. Tuckasegee River from mouth of Noland Creek to mouth	**W**	**N**	**Fishing**	**Rec.**	**B**	
1. Noland Creek	**W**	**N**	**Fishing**	**Fishing**	**C**	**Trout Waters**
a. Clingmans Creek to National Park Service Water Supply Intake	**W**	**N**	**W.S.**	**W.S.**	**A-I**	**Trout Waters - National Park Service Watershed**

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
b. Clingmans Cr. from National Park Service Water Supply intake to mouth	W	N	Fishing	Fishing	C	Trout Waters
c. Salola Branch	W	N	Fishing	Fishing	C	Trout Waters
d. Bald Branch	W	N	Fishing	Fishing	C	Trout Waters
e. Mill Creek	W	N	Fishing	Fishing	C	Trout Waters
f. Holden Cove Br.	W	N	Fishing	Fishing	C	Trout Waters
g. Drinklog Branch	W	N	Fishing	Fishing	C	Trout Waters
h. Andreas Branch	W	N	Fishing	Fishing	C	Trout Waters
i. Indian Creek	W	N	Fishing	Fishing	C	Trout Waters
j. Bearpen Branch	W	N	Fishing	Fishing	C	Trout Waters
k. Laurel Branch	W	N	Fishing	Fishing	C	Trout Waters
2. Flat Branch	W	N	Fishing	Fishing	C	Trout Waters
3. Goldmine Branch	W	N	Fishing	Fishing	C	Trout Waters
a. Hyatt Branch	W	N	Fishing	Fishing	C	Trout Waters
b. Tunnel Branch	W	N	Fishing	Fishing	C	Trout Waters
4. Brewer Branch	W	N	Fishing	Fishing	C	Trout Waters
5. Forney Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Cherry Branch	W	N	Fishing	Fishing	C	Trout Waters
b. Steeltrap Creek	W	N	Fishing	Fishing	C	Trout Waters
c. Little Steeltrap Cr.	W	N	Fishing	Fishing	C	Trout Waters
d. Buckhorn Branch	W	N	Fishing	Fishing	C	Trout Waters
e. Chokeberry Branch	W	N	Fishing	Fishing	C	Trout Waters
f. Huggins Creek	W	N	Fishing	Fishing	C	Trout Waters
g. Broad Camp Creek	W	N	Fishing	Fishing	C	Trout Waters
h. Jonas Creek	W	N	Fishing	Fishing	C	Trout Waters

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(1) Little Jonas Cr.	W	N	Fishing	Fishing	C	Trout Waters
(a) Bearpen Cr.	W	N	Fishing	Fishing	C	Trout Waters
i. Scarlet Ridge Cr.	W	N	Fishing	Fishing	C	Trout Waters
j. White Mans Glory Cr.	W	N	Fishing	Fishing	C	Trout Waters
k. Locust Creek	W	N	Fishing	Fishing	C	Trout Waters
l. Slab Camp Branch	W	N	Fishing	Fishing	C	Trout Waters
m. Bee Gum Branch	W	N	Fishing	Fishing	C	Trout Waters
n. Avakrem Branch	W	N	Fishing	Fishing	C	Trout Waters
o. Whiteoak Branch	W	N	Fishing	Fishing	C	Trout Waters
p. Welch Branch	W	N	Fishing	Fishing	C	Trout Waters
q. Bear Creek	W	N	Fishing	Fishing	C	Trout Waters
r. Gray Wolf Creek	W	N	Fishing	Fishing	C	Trout Waters
6. Glady Branch	W	N	Fishing	Fishing	C	Trout Waters
7. Little Laurel Branch	W	N	Fishing	Fishing	C	Trout Waters
8. Jenny Branch	W	N	Fishing	Fishing	C	Trout Waters
9. Polecat Branch	W	N	Fishing	Fishing	C	Trout Waters
10. Gunter Branch	W	N	Fishing	Fishing	C	Trout Waters
11. Monteith Branch	W	N	Fishing	Fishing	C	Trout Waters
M-1. Welch Branch	W	N	Fishing	Fishing	C	Trout Waters
1. Pole Bridge Branch	W	N	Fishing	Fishing	C	Trout Waters
2. Poundmill Branch	W	N	Fishing	Fishing	C	Trout Waters
N-1. Hogpen Branch	W	N	Fishing	Fishing	C	Trout Waters
O-1. Halfmile Branch	W	N	Fishing	Fishing	C	Trout Waters
P-1. Poplar Pole Branch	W	N	Fishing	Fishing	C	Trout Waters
Q-1. Panther Creek	W	N	Fishing	Fishing	C	Trout Waters
1. Shell Stand Creek	W	N	Fishing	Fishing	C	
a. Deep Gap Creek	W	N	Fishing	Fishing	C	
b. Whiteoak Creek	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
c. Elbow Branch	W	N	Fishing	Fishing	C	
d. Little Coon Branch	W	N	Fishing	Fishing	C	
e. Coon Branch	W	N	Fishing	Fishing	C	
f. Reid Branch	W	N	Fishing	Fishing	C	
g. Whiteoak Branch	W	N	Fishing	Fishing	C	
2. Rock Creek	W	N	Fishing	Fishing	C	
a. Cook Branch	W	N	Fishing	Fishing	C	
3. Rough Branch	W	N	Fishing	Fishing	C	
4. Horse Branch	W	N	Fishing	Fishing	C	
5. Little Horse Branch	W	N	Fishing	Fishing	C	
6. Wolf Creek	W	N	Fishing	Fishing	C	
a. Cody Branch	W	N	Fishing	Fishing	C	
b. Little Branch	W	N	Fishing	Fishing	C	
c. Laurel Branch	W	N	Fishing	Fishing	C	
d. Medlin Branch	W	N	Fishing	Fishing	C	
e. Big Branch	W	N	Fishing	Fishing	C	
f. Proctor Branch	W	N	Fishing	Fishing	C	
g. Tobacco Branch	W	N	Fishing	Fishing	C	
7. Roaring Branch	W	N	Fishing	Fishing	C	
8. Murphy Branch	W	N	Fishing	Fishing	C	
a. Town Branch	W	N	Fishing	Fishing	C	
9. Mouse Branch	W	N	Fishing	Fishing	C	
R-1. Buckeye Branch	W	N	Fishing	Fishing	C	Trout Waters
S-1. Chambers Creek	W	N	Fishing	Fishing	C	Trout Waters
1. North Fork	W	N	Fishing	Fishing	C	Trout Waters
a. Hogpen Branch	W	N	Fishing	Fishing	C	Trout Waters
b. Springhouse Branch	W	N	Fishing	Fishing	C	Trout Waters
c. Cherry Branch	W	N	Fishing	Fishing	C	Trout Waters
d. Big Branch	W	N	Fishing	Fishing	C	Trout Waters

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
2. West Fork	W	N	Fishing	Fishing	C	Trout Waters
a. Kate Branch	W	N	Fishing	Fishing	C	Trout Waters
b. Chambers Branch	W	N	Fishing	Fishing	C	Trout Waters
3. Anthony Branch	W	N	Fishing	Fishing	C	Trout Waters
T-1. Kirkland Creek	W	N	Fishing	Fishing	C	Trout Waters
U-1. Pendleton Creek	W	N	Fishing	Fishing	C	
V-1. Meetinghouse Creek	W	N	Fishing	Fishing	C	
W-1. Stecoah Creek	WF	N	Fishing	Fishing	C	Trout Waters
1. Cody Branch	WF	N	Fishing	Fishing	C	
2. Dry Creek	WF	N	Fishing	Fishing	C	
3. Carver Branch	WF	N	Fishing	Fishing	C	
4. Edwards Branch	W	N	Fishing	Fishing	C	
5. Sawyer Creek	WF	N	Fishing	Fishing	C	Trout Waters
a. South Fork Sawyer Cr.	W	N	Fishing	Fishing	C	
(1) Brown Fork	W	N	Fishing	Fishing	C	
(2) Big Branch	W	N	Fishing	Fishing	C	
b. Johnson Gap Branch	W	N	Fishing	Fishing	C	
c. Boelinger Branch	W	N	Fishing	Fishing	C	
6. Laurel Branch	W	N	Fishing	Fishing	C	
7. Little Laurel Branch	W	N	Fishing	Fishing	C	
X-1. Pilkey Creek	W	N	Fishing	Fishing	C	Trout Waters
1. Clark Branch	W	N	Fishing	Fishing	C	Trout Waters
Y-1. Owensby Branch	W	N	Fishing	Fishing	C	
Z-1. Chesquaw Branch	W	N	Fishing	Fishing	C	Trout Waters
A-2. Tuckeegee Creek	WF	N	Fishing	Fishing	C	
1. South Fork	W	N	Fishing	Fishing	C	
2. North Fork	W	N	Fishing	Fishing	C	
a. Sandy Branch	W	N	Fishing	Fishing	C	
3. Chestnut Log Branch	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
4. Maple Branch	W	N	Fishing	Fishing	C	
5. Flat Branch	W	N	Fishing	Fishing	C	
6. Bailey Branch	W	N	Fishing	Fishing	C	
B-2. Hyde Branch	W	N	Fishing	Fishing	C	
C-2. Mill Branch	W	N	Fishing	Fishing	C	Trout Waters
1. Calhoun Branch	W	N	Fishing	Fishing	C	Trout Waters
D-2. Yellow Branch	W	N	Fishing	Fishing	C	
E-2. Shoal Branch	W	N	Fishing	Fishing	C	
F-2. Whiteside Creek	W	N	Fishing	Fishing	C	Trout Waters
G-2. Poison Branch	W	N	Fishing	Fishing	C	
H-2. Cable Cove Branch	W	N	Fishing	Fishing	C	
1. Wagontree Branch	W	N	Fishing	Fishing	C	
2. Indian Camp Branch	W	N	Fishing	Fishing	C	
III. Little Tennessee R. from upstream side of mouth of Hazel Cr. to Fontana Dam	W	N	W.S.	W.S.	A-II	Fontana Village Watershed
A. Hazel Cr. to mouth of Possum Hollow Creek	W	N	Fishing	Fishing	C	Trout Waters
1. Anthony Branch	W	N	Fishing	Fishing	C	Trout Waters
2. Proctor Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Boomer Branch	W	N	Fishing	Fishing	C	Trout Waters
3. Elbow Branch	W	N	Fishing	Fishing	C	Trout Waters
4. Walker Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Brushy Branch	W	N	Fishing	Fishing	C	Trout Waters
5. Huggins Branch	W	N	Fishing	Fishing	C	Trout Waters
6. Bee Gum Branch	W	N	Fishing	Fishing	C	Trout Waters
7. Cold Spring Branch	W	N	Fishing	Fishing	C	Trout Waters
a. Right Fork	W	N	Fishing	Fishing	C	Trout Waters

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
8. Bone Valley Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Roaring Creek	W	N	Fishing	Fishing	C	Trout Waters
(1) Rock Camp Br.	W	N	Fishing	Fishing	C	Trout Waters
(2) Desolation Br.	W	N	Fishing	Fishing	C	Trout Waters
(a) Calhoun Br.	W	N	Fishing	Fishing	C	Trout Waters
b. Defeat Branch	W	N	Fishing	Fishing	C	Trout Waters
c. Woody Ridge Branch	W	N	Fishing	Fishing	C	Trout Waters
(1) Nunda Branch	W	N	Fishing	Fishing	C	Trout Waters
d. Big Flats Branch	W	N	Fishing	Fishing	C	Trout Waters
e. Mill Branch	W	N	Fishing	Fishing	C	Trout Waters
f. White Walnut Branch	W	N	Fishing	Fishing	C	Trout Waters
9. Haw Gap Branch	W	N	Fishing	Fishing	C	Trout Waters
a. Cope Branch	W	N	Fishing	Fishing	C	Trout Waters
10. Sandy Gap Branch	W	N	Fishing	Fishing	C	Trout Waters
11. Pine Gap Branch	W	N	Fishing	Fishing	C	Trout Waters
12. Rowan Branch	W	N	Fishing	Fishing	C	Trout Waters
B. Hazel Cr. from mouth of Possum Hollow Cr. to mouth	W	N	W.S.	W.S.	A-II	Trout Waters - Fontana Village Watershed
1. Possum Hollow Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Bearpen Branch	W	N	Fishing	Fishing	C	Trout Waters
b. Hickory Bottom Br.	W	N	Fishing	Fishing	C	Trout Waters
2. Laurel Branch	W	N	Fishing	Fishing	C	Trout Waters
3. Cable Branch	W	N	Fishing	Fishing	C	Trout Waters
4. Matt Branch	W	N	Fishing	Fishing	C	Trout Waters
C. Blaze Branch	W	N	Fishing	Fishing	C	
D. Rattlesnake Branch	W	N	Fishing	Fishing	C	
E. Slick Branch	W	N	Fishing	Fishing	C	Trout Waters
F. Persimmon Branch	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
G. Myers Branch	W	N	Fishing	Fishing	C	Trout Waters
H. Eagle Cr. to mouth of Lost Cove Cr.	W	N	Fishing	Fishing	C	Trout Waters
1. Gunna Creek	W	N	Fishing	Fishing	C	Trout Waters
2. Pawpaw Creek	W	N	Fishing	Fishing	C	Trout Waters
3. Tub Mill Branch	W	N	Fishing	Fishing	C	Trout Waters
a. Laurel Branch	W	N	Fishing	Fishing	C	Trout Waters
b. Lawson Grant Lot Br.	W	N	Fishing	Fishing	C	Trout Waters
4. Ekaneettee Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Proctor Sang Branch	W	N	Fishing	Fishing	C	Trout Waters
b. Hurricane Branch	W	N	Fishing	Fishing	C	Trout Waters
5. Pinnacle Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Soapstone Branch	W	N	Fishing	Fishing	C	Trout Waters
I. Eagle Cr. from mouth of Lost Cove Cr. to mouth	W	N	W.S.	W.S.	A-II	Trout Waters - Fontana Village Watershed
1. Lost Cove Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Coldspring Branch	W	N	Fishing	Fishing	C	Trout Waters
2. Ecoah Branch	W	N	Fishing	Fishing	C	Trout Waters
3. Birchfield Branch	W	N	Fishing	Fishing	C	Trout Waters
4. Augerhole Branch	W	N	Fishing	Fishing	C	Trout Waters
5. Licklog Branch	W	N	Fishing	Fishing	C	Trout Waters
J. Payne Branch	W	N	Fishing	Fishing	C	Trout Waters
IV. Little Tennessee R. from Fontana Dam to North Carolina-Tennessee State Line	W	N	Fishing	Fishing	C	Trout Waters (Lake Cheoah)
A-1. Walker Branch	W	N	Fishing	Fishing	C	
1. Gold Branch	W	N	Fishing	Fishing	C	
B-1. Panel Branch	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
C-1. Welch Cove Branch	W	N	Fishing	Fishing	C	
D-1. Lewellyn Branch	W	N	Fishing	Fishing	C	Trout Waters
E-1. Sweet Branch	W	N	Fishing	Fishing	C	Trout Waters
F-1. Fax Branch	W	N	Fishing	Fishing	C	Trout Waters
G-1. Fax Creek	W	N	Fishing	Fishing	C	
H-1. Jack Shute Branch	W	N	Fishing	Fishing	C	
I-1. Deaver Branch	W	N-P	WD	Drainage	D	D.S. Santeetlah Village
1. Dednan Br. to Santeetlah Village Water intake	W	N	W.S.	W.S.	A-I	Santeetlah Village Watershed
2. Dednan Br. from Santeetlah Village Water intake to mouth	W	N	Drainage	Drainage	D	
J-1. Farley Branch	W	N	Fishing	Fishing	C	
K-1. Twentymile Cr. to mouth of Proctor Branch	W	N	Fishing	Fishing	C	Trout Waters
1. Greer Branch	W	N	Fishing	Fishing	C	Trout Waters
2. Rye Patch Branch	W	N	Fishing	Fishing	C	Trout Waters
L-1. Twentymile Cr. from mouth of Proctor Br. to mouth	W	N	W.S.	W.S.	A-I	Trout Waters - National Park Service Watershed
1. Proctor Branch	W	N	Fishing	Fishing	C	Trout Waters
2. Moore Spring Br. to mouth of Dalton Branch	W	N	Fishing	Fishing	C	Trout Waters
3. Moore Spring Br. from mouth of Dalton Br. to mouth	W	N	W.S.	W.S.	A-I	Trout Waters -National Park Service Watershed
a. Dalton Branch	W	N	Fishing	Fishing	C	Trout Waters

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
M-1. Judy Branch	W	N	Fishing	Fishing	C	Trout Waters
N-1. Rocky Point Ferry Br.	W	N	Fishing	Fishing	C	
O-1. Buggy Branch	W	N	Fishing	Fishing	C	
P-1. Fishtrap Branch	W	N	Fishing	Fishing	C	
Q-1. Pole Bridge Branch	W	N	Fishing	Fishing	C	Trout Waters
R-1. Deals Branch	W	N	Fishing	Fishing	C	Trout Waters
S-1. Laurel Branch	W	N	Fishing	Fishing	C	
T-1. Aiken Branch	W	N	Fishing	Fishing	C	Trout Waters
U-1. Little Laurel Branch	W	N	Fishing	Fishing	C	
V-1. Stratton Branch	W	N	Fishing	Fishing	C	Trout Waters
W-1. Clat Branch	W	N	Fishing	Fishing	C	
X-1. Cheoah River	WF & PA	N-P	Fishing	Fishing	C	Trout Waters
1. Tulula Creek	WF & PA	N-P	Fishing	Fishing	C	Trout Waters
a. Bear Creek	W	N	Fishing	Fishing	C	Trout Waters
(1) Cabin Branch	W	N	Fishing	Fishing	C	
(2) Cherry Branch	W	N	Fishing	Fishing	C	
(3) Sawmill Branch	W	N	Fishing	Fishing	C	
(4) Dee Branch	W	N	Fishing	Fishing	C	
b. Jacks Branch	W	N	Fishing	Fishing	C	
c. Juts Creek	W	N	Fishing	Fishing	C	
d. Auntney Branch	W	N	Fishing	Fishing	C	
e. Campbell Creek	W	N	Fishing	Fishing	C	
f. Hares Creek	W	N	Fishing	Fishing	C	
g. Anderson Creek	W	N	Fishing	Fishing	C	
h. Millpond Creek	W	N	Fishing	Fishing	C	
i. Bert Creek	W	N	Fishing	Fishing	C	
j. Franks Creek	W	N	Fishing	Fishing	C	Trout Waters
k. Hyde Mill Creek	WF	N	Fishing	Fishing	C	
(1) Carpenter Br.	WF	N	Fishing	Fishing	C	
l. Riley Branch	WF	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(1) Holly Cove Br.	W	N	Fishing	Fishing	C	
m. Wiggins Mill Branch	W	N	Fishing	Fishing	C	
n. Sweetwater Creek	WF & PA	N-P	Fishing	Fishing	C	Trout Waters
(1) Stillhouse Br.	W	N	Fishing	Fishing	C	
(2) Orr Branch	W	N	Fishing	Fishing	C	
(3) Beech Creek	W	N	Fishing	Fishing	C	
(a) North Fork	WF	N	Fishing	Fishing	C	
(b) Rines Creek	W	N	Fishing	Fishing	C	
(c) South Fork Beech Creek	WF	N	Fishing	Fishing	C	
(3) Davis Branch	W	N	Fishing	Fishing	C	
(a) Pinhook Br.	W	N	Fishing	Fishing	C	
(4) Harwood Branch	W	N	Fishing	Fishing	C	
(a) Pigpen Br.	W	N	Fishing	Fishing	C	
(5) Holloway Branch	W	N	Fishing	Fishing	C	
(6) Slay Bacon Branch	W	N	Fishing	Fishing	C	
(7) Long Branch	W	N	Fishing	Fishing	C	
(a) Stillhouse Br.	W	N	Fishing	Fishing	C	
2. Long Cr. to Robbinsville Water Supply intake	W	N	W.S.	W.S.	A-I	Trout Waters - Robbinsville Watershed
a. Panther Creek	W	N	W.S.	W.S.	A-I	Trout Waters - Robbinsville Watershed
b. Burgan Creek	W	N	W.S.	W.S.	A-I	Trout Waters - Robbinsville Watershed
c. Rock Creek	W	N	W.S.	W.S.	A-I	Trout Waters - Robbinsville Watershed
3. Long Cr. from Robbinsville Water Supply intake to mouth	WF & PA	N-P	Fishing	Fishing	C	Trout Waters

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
a. Poison Branch	WF	N	Fishing	Fishing	C	Trout Waters
b. Atoah Creek	WF	N	Fishing	Fishing	C	
(1) Jake Branch	WF	N	Fishing	Fishing	C	
(2) Tahquette Branch	WF	N	Fishing	Fishing	C	
c. Moose Branch	WF	N	Fishing	Fishing	C	
d. Mauney Branch	WF	N	Fishing	Fishing	C	
4. Mountain Creek	WF	N	Fishing	Fishing	C	Trout Waters
a. Basin Branch	W	N	Fishing	Fishing	C	
b. Green Creek	W	N	Fishing	Fishing	C	
c. Shepherd Creek	W	N	Fishing	Fishing	C	
d. Pinhook Branch	W	N	Fishing	Fishing	C	
5. Massey Branch	WF	N	Fishing	Fishing	C	
6. Snowbird Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Bearpen Branch	W	N	Fishing	Fishing	C	
b. Rockbar Branch	W	N	Fishing	Fishing	C	
c. Meadow Branch	W	N	Fishing	Fishing	C	
d. Pantherflat Branch	W	N	Fishing	Fishing	C	
e. Flat Branch	W	N	Fishing	Fishing	C	
f. Little Flat Branch	W	N	Fishing	Fishing	C	
g. Mouse Knob Branch	W	N	Fishing	Fishing	C	
h. Sassafras Creek	W	N	Fishing	Fishing	C	
(1) Fall Branch	W	N	Fishing	Fishing	C	
i. Indian Camp Branch	W	N	Fishing	Fishing	C	
j. Owlcamp Branch	W	N	Fishing	Fishing	C	
k. Belding House Branch	W	N	Fishing	Fishing	C	
l. Wildcat Branch	W	N	Fishing	Fishing	C	
m. Deerlick Branch	W	N	Fishing	Fishing	C	
n. Chestnut Flat Branch	W	N	Fishing	Fishing	C	
o. Polecat Branch	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
p. Lovin Branch	W	N	Fishing	Fishing	C	
q. Little Snowbird Cr.	W	N	Fishing	Fishing	C	
(1) Newman Branch	W	N	Fishing	Fishing	C	
(2) Hornet Nest Br.	W	N	Fishing	Fishing	C	
(3) Mulky Branch	W	N	Fishing	Fishing	C	
(4) Tom Taylor Branch	W	N	Fishing	Fishing	C	
(5) Lucy Branch	W	N	Fishing	Fishing	C	
(6) Birchspring Br.	W	N	Fishing	Fishing	C	
(7) Plankroad Branch	W	N	Fishing	Fishing	C	
(8) Gunstock Branch	W	N	Fishing	Fishing	C	
(9) Coldspring Br.	W	N	Fishing	Fishing	C	
(10) Wolfpen Branch	W	N	Fishing	Fishing	C	
(11) Juanita Branch	W	N	Fishing	Fishing	C	
(12) Rocky Spring Br.	W	N	Fishing	Fishing	C	
(13) Sunday Branch	W	N	Fishing	Fishing	C	
(14) Allmon Branch	W	N	Fishing	Fishing	C	
(15) Boardcamp Branch	W	N	Fishing	Fishing	C	
(16) Axefield Branch	W	N	Fishing	Fishing	C	
(17) Bear Creek	W	N	Fishing	Fishing	C	
(a) Birch Spring Branch	W	N	Fishing	Fishing	C	
(b) Flat Branch	W	N	Fishing	Fishing	C	
(18) Eller Mill Creek	W	N	Fishing	Fishing	C	
(19) Fox Squirrel Br.	W	N	Fishing	Fishing	C	
(20) Lige Branch	W	N	Fishing	Fishing	C	
(21) Hunting Boy Br.	W	N	Fishing	Fishing	C	
r. Dick Branch	W	N	Fishing	Fishing	C	
s. Long Branch	W	N	Fishing	Fishing	C	
(1) Cornsilk Branch	W	N	Fishing	Fishing	C	
t. Hooper Branch	W	N	Fishing	Fishing	C	
u. Barker Branch	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(2) Adam Camp Br.	W	N	Fishing	Fishing	C	
(3) Daviscamp Br.	W	N	Fishing	Fishing	C	
(4) Grassy Branch	W	N	Fishing	Fishing	C	
(5) Indian Spring Br.	W	N	Fishing	Fishing	C	
h. Avey Creek	W	N	Fishing	Fishing	C	
i. Attooga Branch	W	N	Fishing	Fishing	C	
12. Gladdens Creek	WF	N	Fishing	Fishing	C	
13. Cochran Creek	WF	N	Fishing	Fishing	C	
a. Almond Branch	WF	N	Fishing	Fishing	C	
b. Colvin Branch	WF	N	Fishing	Fishing	C	
14. Gold Mine Branch	WF	N	Fishing	Fishing	C	
15. Rock Creek	W	N	Fishing	Fishing	C	
16. Cochran Creek	W	N	Fishing	Fishing	C	
17. Laurel Branch	W	N	Fishing	Fishing	C	
18. Yellow Creek	WF	N	Fishing	Fishing	C	Trout Waters
a. Cody Branch	W	N	Fishing	Fishing	C	
b. Big Branch	W	N	Fishing	Fishing	C	
c. Dummy Branch	W	N	Fishing	Fishing	C	
d. Bee Creek	W	N	Fishing	Fishing	C	
(1) Williams Branch	W	N	Fishing	Fishing	C	
e. Higlon Branch	W	N	Fishing	Fishing	C	
f. Pounding Mill Branch	W	N	Fishing	Fishing	C	
g. Turnpin Branch	W	N	Fishing	Fishing	C	
h. Rickman Branch	W	N	Fishing	Fishing	C	
i. Sawmill Branch	W	N	Fishing	Fishing	C	
j. Lifting Rock Branch	W	N	Fishing	Fishing	C	
19. Persimmon Tree Branch	W	N	Fishing	Fishing	C	
20. Pucheon Camp Branch	W	N	Fishing	Fishing	C	
21. Falls Branch	W	N	Fishing	Fishing	C	
22. Deep Creek	W	N	Fishing	Fishing	C	

TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
v. Long Hungry Br.	W	N	Fishing	Fishing	C	
7. West Buffalo Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Squally Creek	W	N	Fishing	Fishing	C	Trout Waters
(1) South Fork	W	N	Fishing	Fishing	C	
b. Little Buffalo Cr.	W	N	Fishing	Fishing	C	Trout Waters
c. Hooper Mill Creek	W	N	Fishing	Fishing	C	
(1) Dogfall Branch	W	N	Fishing	Fishing	C	
(2) Seven Springs Br.	W	N	Fishing	Fishing	C	
(3) Bearden Branch	W	N	Fishing	Fishing	C	
(4) Little Obadiah Cr.	W	N	Fishing	Fishing	C	
d. Cedar Creek	W	N	Fishing	Fishing	C	
e. Teecatlah Branch	W	N	Fishing	Fishing	C	
f. Duncan Branch	W	N	Fishing	Fishing	C	
8. Ground Squirrel Branch	W	N	Fishing	Fishing	C	
9. Charikus Branch	W	N	Fishing	Fishing	C	
10. East Buffalo Creek	W	N	Fishing	Fishing	C	
a. Ollie Branch	W	N	Fishing	Fishing	C	
b. Ryefield Branch	W	N	Fishing	Fishing	C	
11. Santeetlah Creek	W	N	Fishing	Fishing	C	
a. Whigg Branch	W	N	Fishing	Fishing	C	
b. Johns Branch	W	N	Fishing	Fishing	C	
c. Cold Branch	W	N	Fishing	Fishing	C	
(1) Bob Branch	W	N	Fishing	Fishing	C	
d. Sand Creek	W	N	Fishing	Fishing	C	
(1) West Laurel Br.	W	N	Fishing	Fishing	C	
e. Indian Creek	W	N	Fishing	Fishing	C	
f. Wright Creek	W	N	Fishing	Fishing	C	
g. Little Santeetlah Cr.	W	N	Fishing	Fishing	C	
(1) Groundhog Branch	W	N	Fishing	Fishing	C	

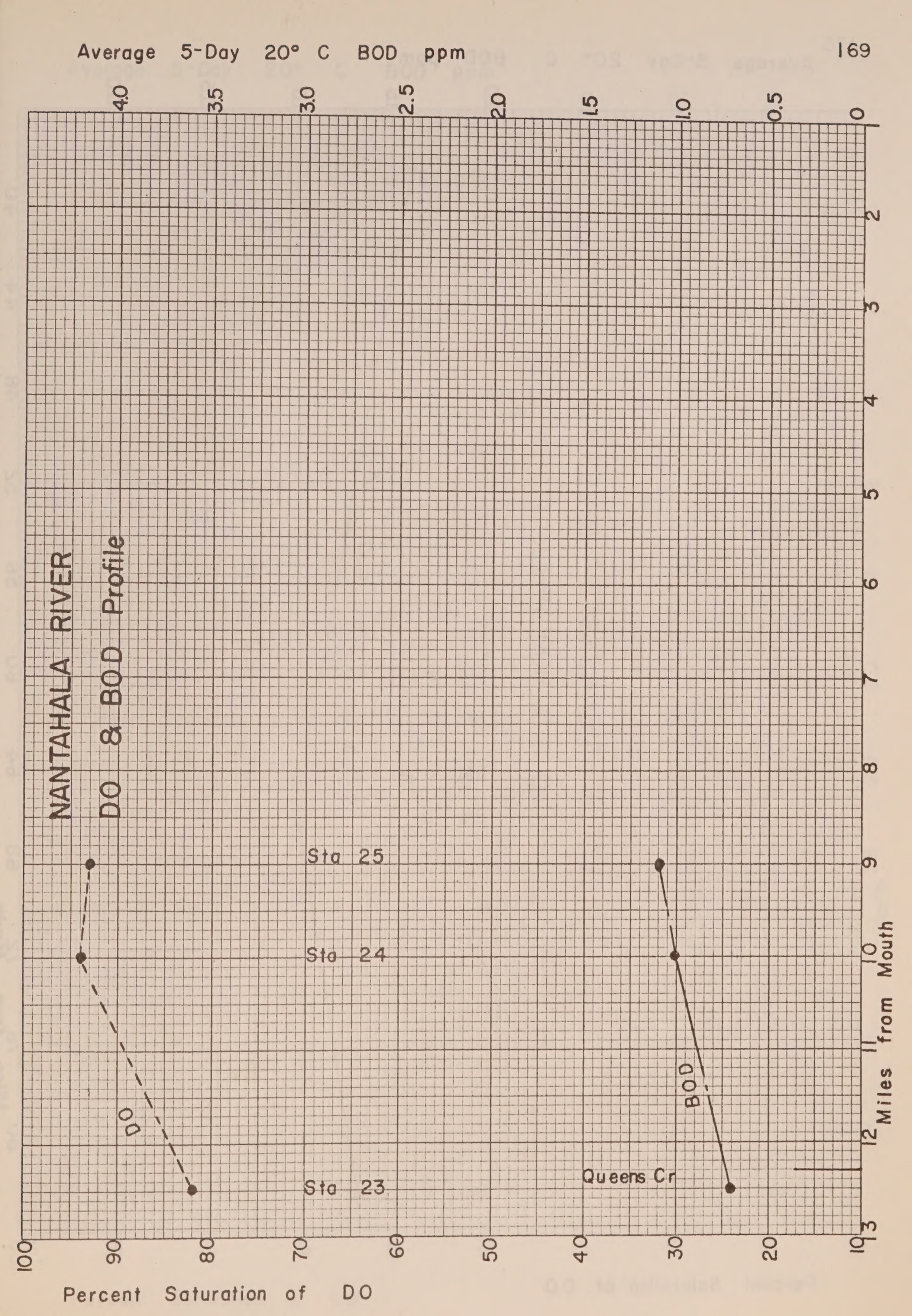
TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

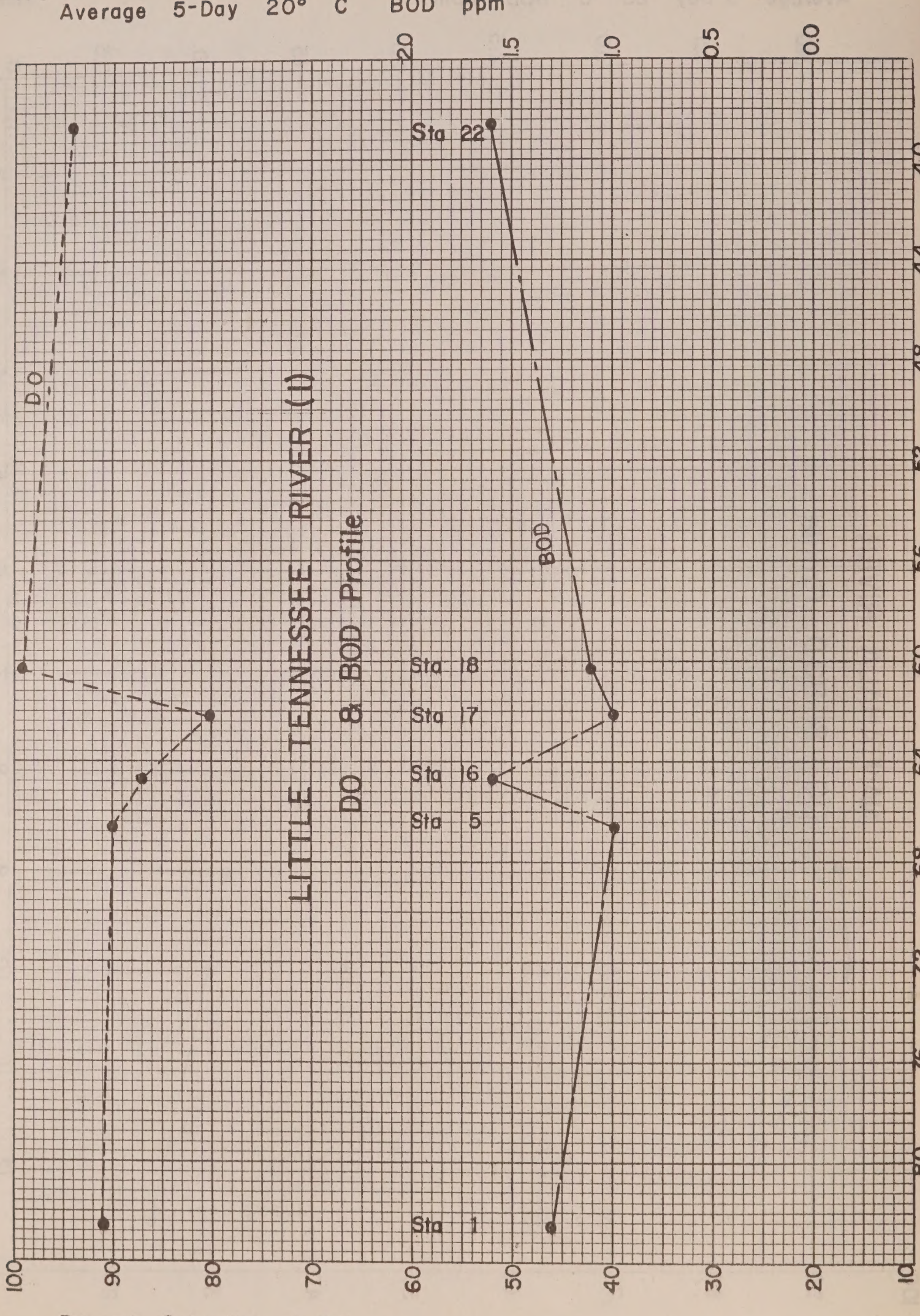
Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
a. Hudson Deaden Br.	W	N	Fishing	Fishing	C	
b. Rockwall Branch	W	N	Fishing	Fishing	C	
c. Blackgum Branch	W	N	Fishing	Fishing	C	
d. Rough Branch	W	N	Fishing	Fishing	C	
e. Indian Grave Br.	W	N	Fishing	Fishing	C	
23. Frisby Branch	W	N	Fishing	Fishing	C	
24. Halfmile Branch	W	N	Fishing	Fishing	C	
25. Barker Creek	W	N	Fishing	Fishing	C	
a. Cooper Camp Branch	W	N	Fishing	Fishing	C	
26. Bear Creek	W	N	Fishing	Fishing	C	
a. Beach Creek	W	N	Fishing	Fishing	C	
b. Middle Creek	W	N	Fishing	Fishing	C	
c. Sugar Cove Branch	W	N	Fishing	Fishing	C	
d. Jane Branch	W	N	Fishing	Fishing	C	
e. Grassy Branch	W	N	Fishing	Fishing	C	
f. Caney Branch	W	N	Fishing	Fishing	C	
(1) Little Blackgum Br.	W	N	Fishing	Fishing	C	
27. Otter Rock Branch	W	N	Fishing	Fishing	C	
28. Meadow Branch	WF & PA	N-P	Fishing	Fishing	C	Private Outfalls - Bethel Community
29. Yellowhammer Br. to Tapoco, Inc. Water Supply intake	W	N	W.S.	W.S.	A-I	Tapoco, Inc. Watershed
30. Yellowhammer Br. from Tapoco, Inc. Water Supply intake to mouth	W & PA	N	Drainage	Drainage	D	
Y-1. Magazine Branch	W	N	Fishing	Fishing	C	
Z-1. Ike Branch	W	N	Fishing	Fishing	C	
A-2. Stillhouse Branch	W	N	Fishing	Fishing	C	
B-2. Slickrock Creek	W	N	Fishing	Fishing	C	

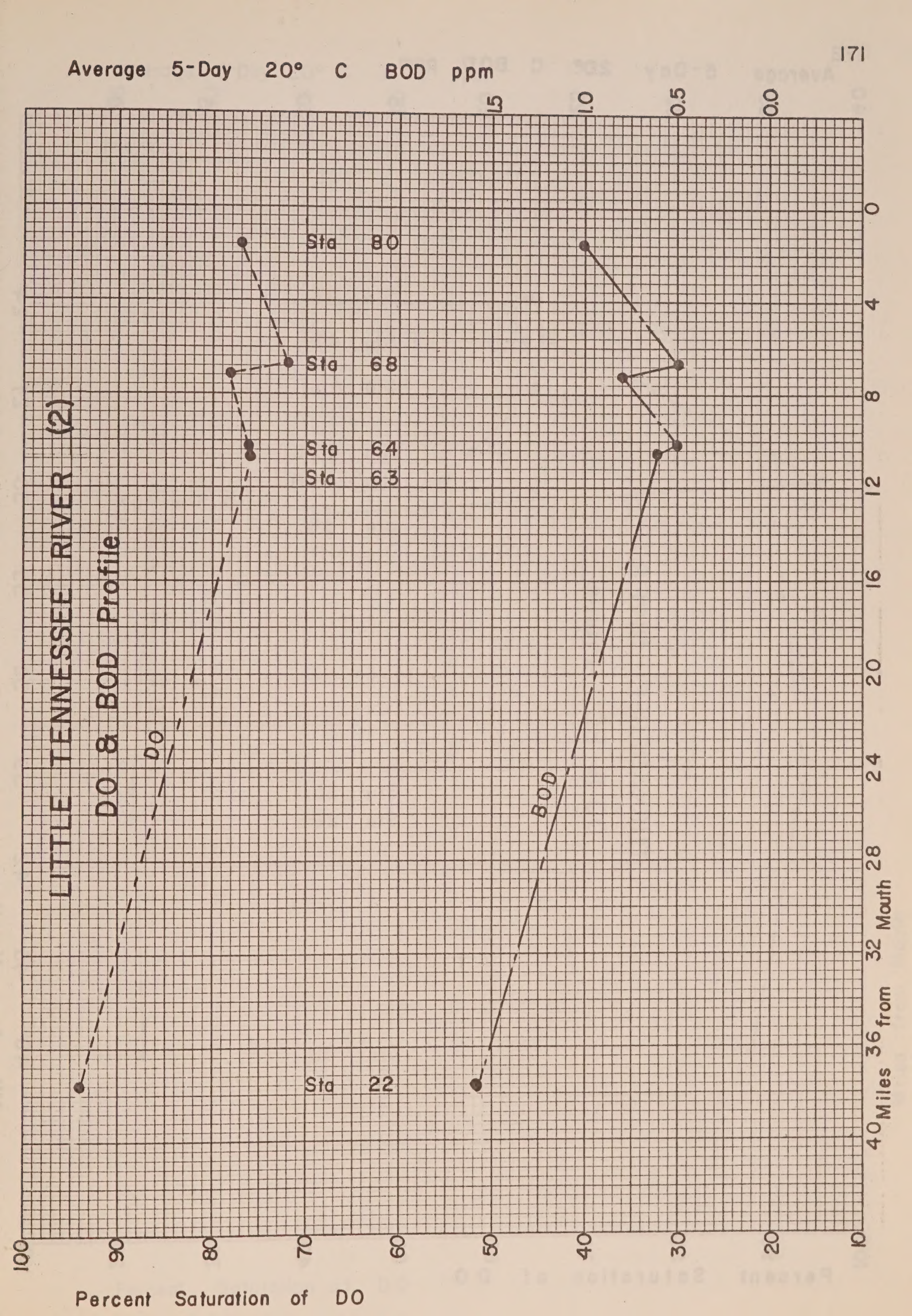
TABLE 10
RECOMMENDED CLASSIFICATIONS
LITTLE TENNESSEE RIVER BASIN

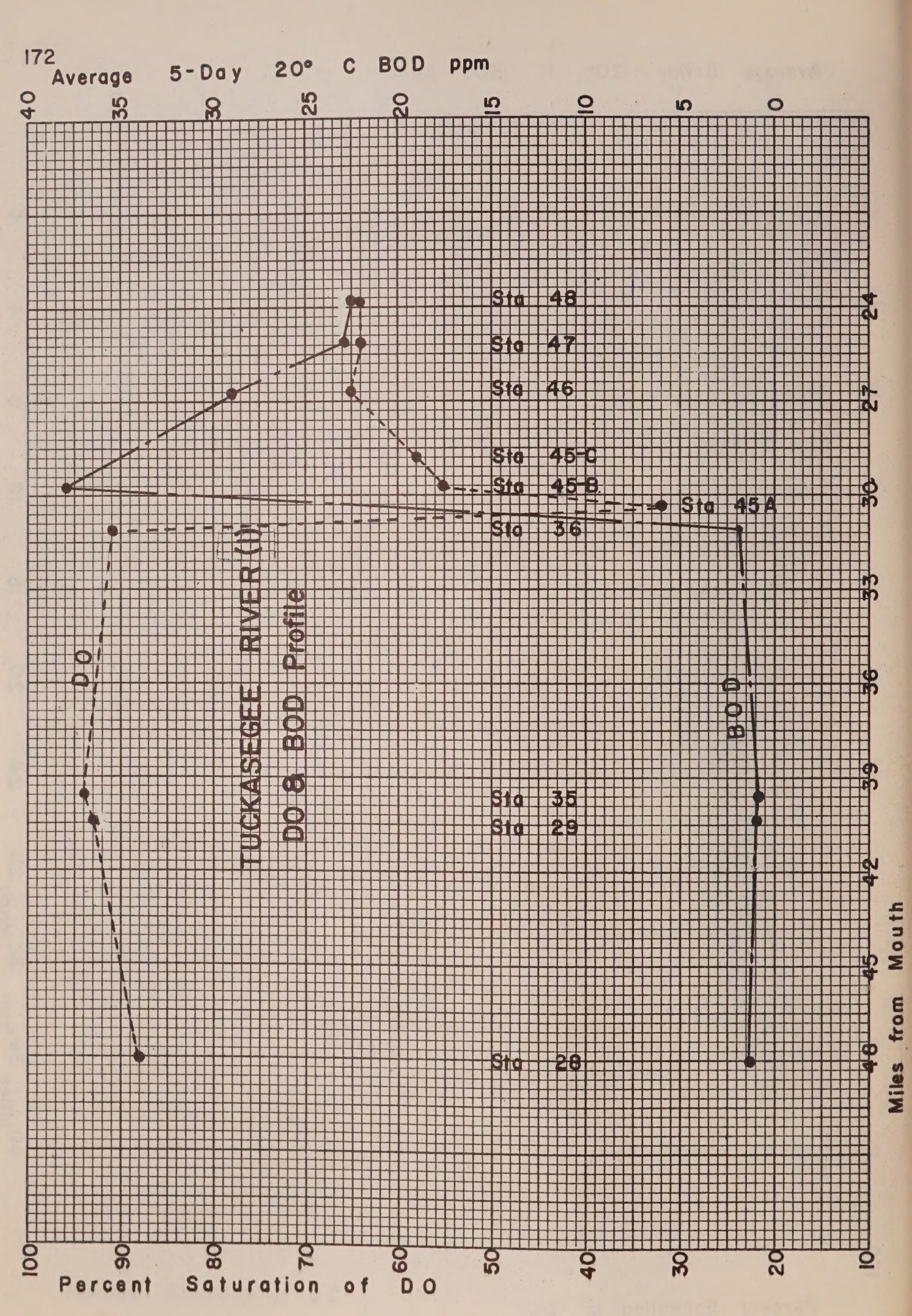
Stream*	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
1. Naked Ground Branch	W	N	Fishing	Fishing	C	
2. Glen Gap Branch	W	N	Fishing	Fishing	C	
3. Rust Branch	W	N	Fishing	Fishing	C	
4. Hangover Creek	W	N	Fishing	Fishing	C	
5. Grapevine Branch	W	N	Fishing	Fishing	C	
6. Buckeye Branch	W	N	Fishing	Fishing	C	
7. Big Flat Branch	W	N	Fishing	Fishing	C	
8. Nichols Cove Branch	W	N	Fishing	Fishing	C	
C-3. Tellico River to N.C.-Tennessee State Line**	**W**	**N**	**Fishing**	**Fishing**	**C**	
1. Bob Creek	**W**	**N**	**Fishing**	**Fishing**	**C**	
2. Mistletoe Creek	**W**	**N**	**Fishing**	**Fishing**	**C**	
3. Peckerwood Creek	**W**	**N**	**Fishing**	**Fishing**	**C**	
4. Jenks Branch	**W**	**N**	**Fishing**	**Fishing**	**C**	

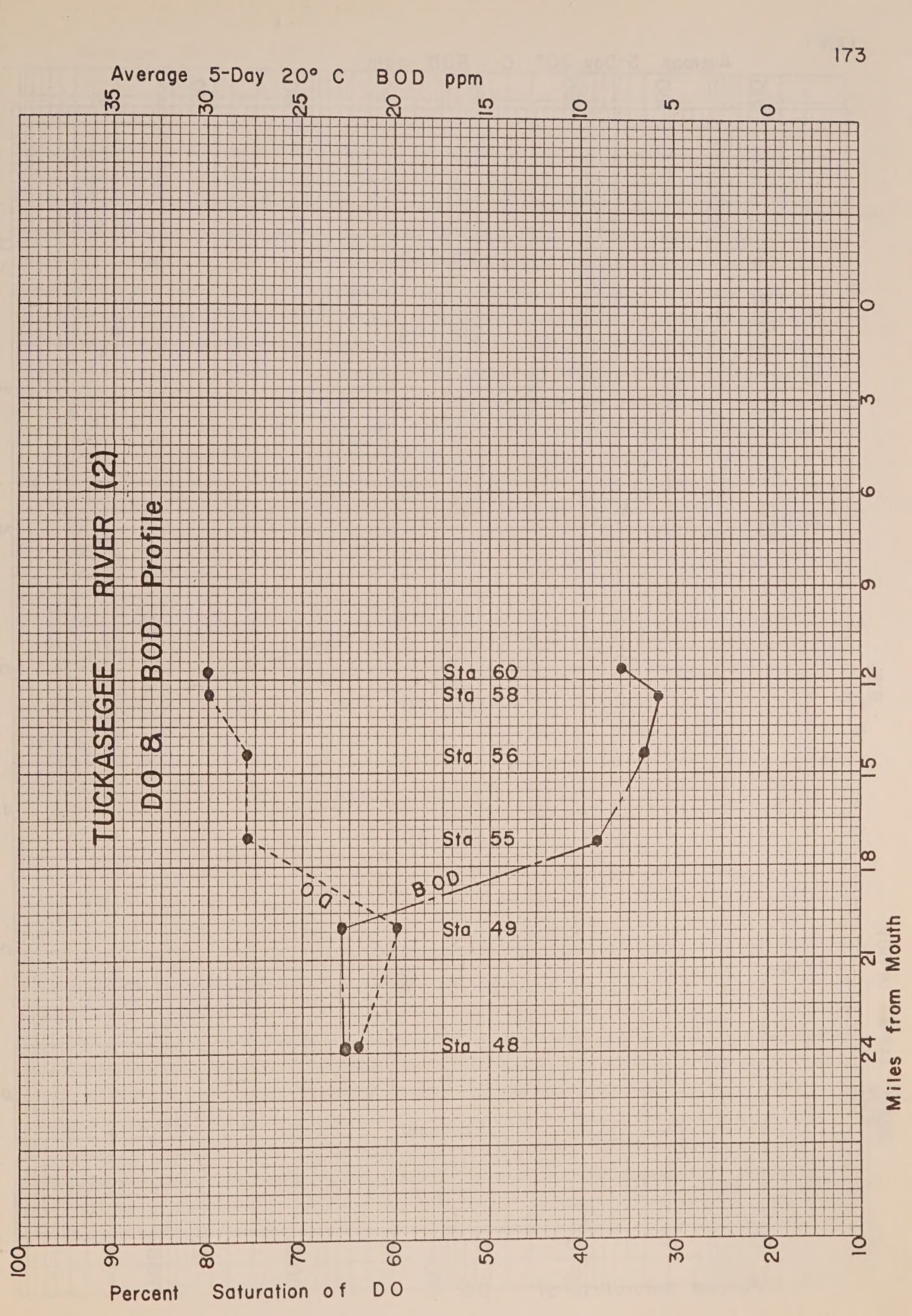
** Tributary to Little Tennessee River in State of Tennessee.

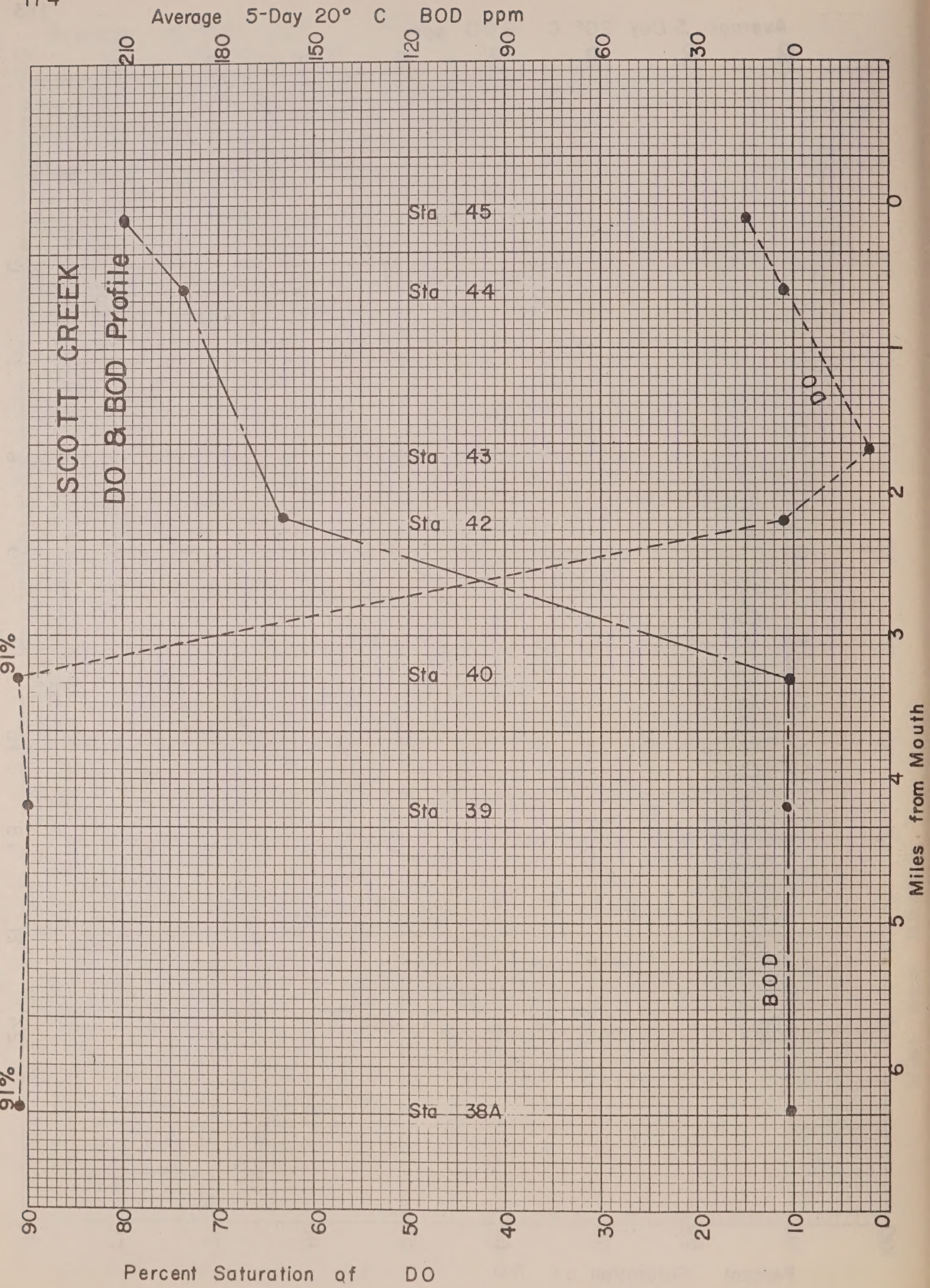

Average 5-Day 20° C BOD ppm
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0
NANTAHALA RIVER
DO & BOD Profile
Sta 25
Sta 24
Sta 23
DO
BOD
Queens Cr
2
3
4
5
6
7
8
9
10
11
12
13
Miles from Mouth
100
90
80
70
60
50
40
30
20
10
Percent Saturation of DO

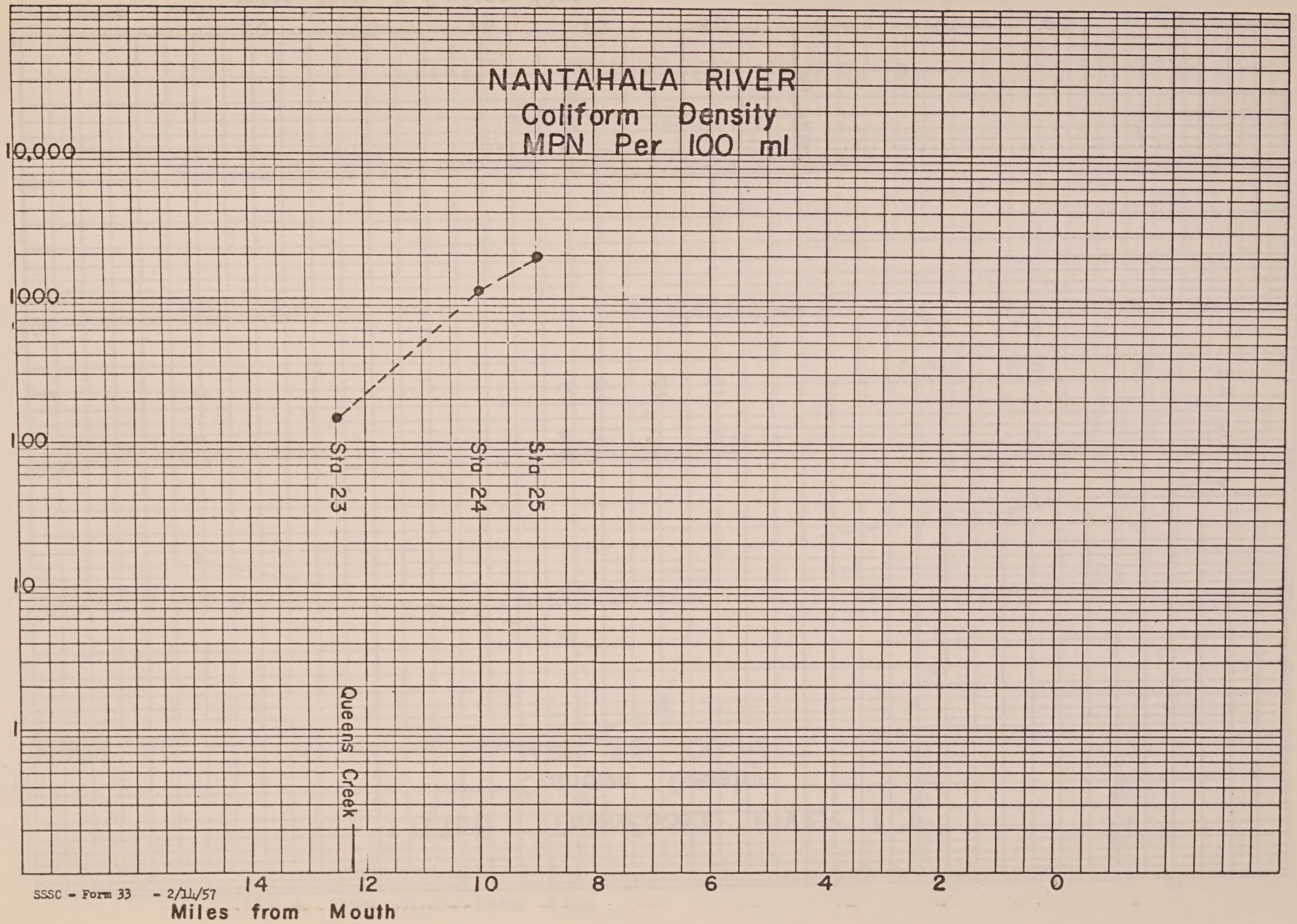

Average 5-Day 20° C BOD ppm
2.0
1.5
1.0
0.5
0.0
LITTLE TENNESSEE RIVER (1)
DO & BOD Profile
DO
BOD
Sta 22
Sta 18
Sta 17
Sta 16
Sta 5
Sta 1
40
44
48
52
56
60
64
68
72
76
80
Miles from Mouth
100
90
80
70
60
50
40
30
20
10
Percent Saturation of DO


Average 5-Day 20° C BOD ppm
1.5
1.0
0.5
0.0
LITTLE TENNESSEE RIVER (2)
DO & BOD Profile
Sta 80
Sta 68
Sta 64
Sta 63
Sta 22
DO
BOD
0
4
8
12
16
20
24
28
32
36
40
Miles from Mouth
100
90
80
70
60
50
40
30
20
10
Percent Saturation of DO

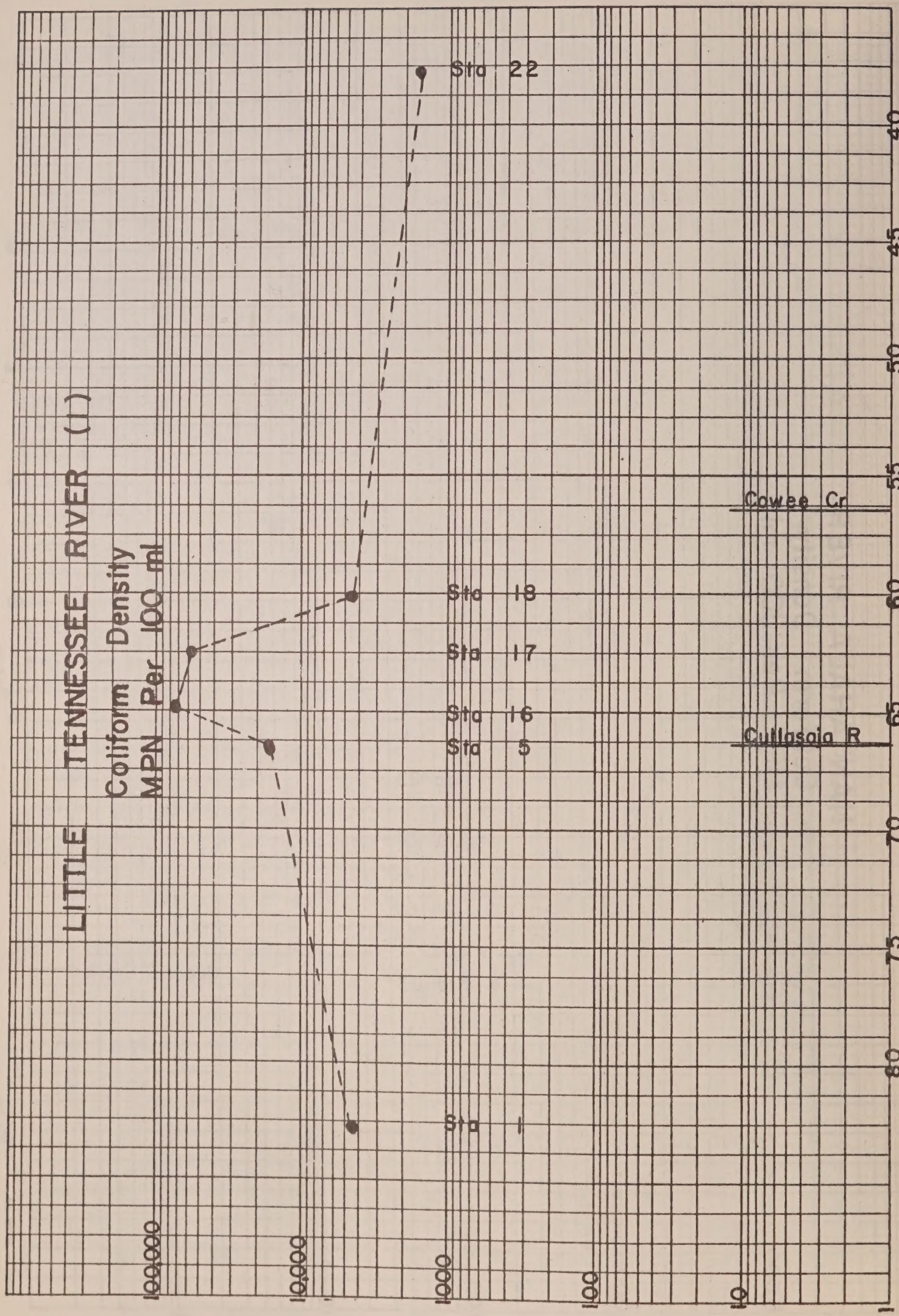

Average 5-Day 20° C BOD ppm
40
35
30
25
20
15
10
5
0
Sta 48
Sta 47
Sta 46
Sta 45-C
Sta 45-B
Sta 45A
Sta 36
Sta 35
Sta 29
Sta 28
DO
BOD
TUCKASEGEE RIVER (U)
DO & BOD Profile
100
90
80
70
60
50
40
30
20
10
Percent Saturation of DO
24
27
30
33
36
39
42
45
48
Miles from Mouth

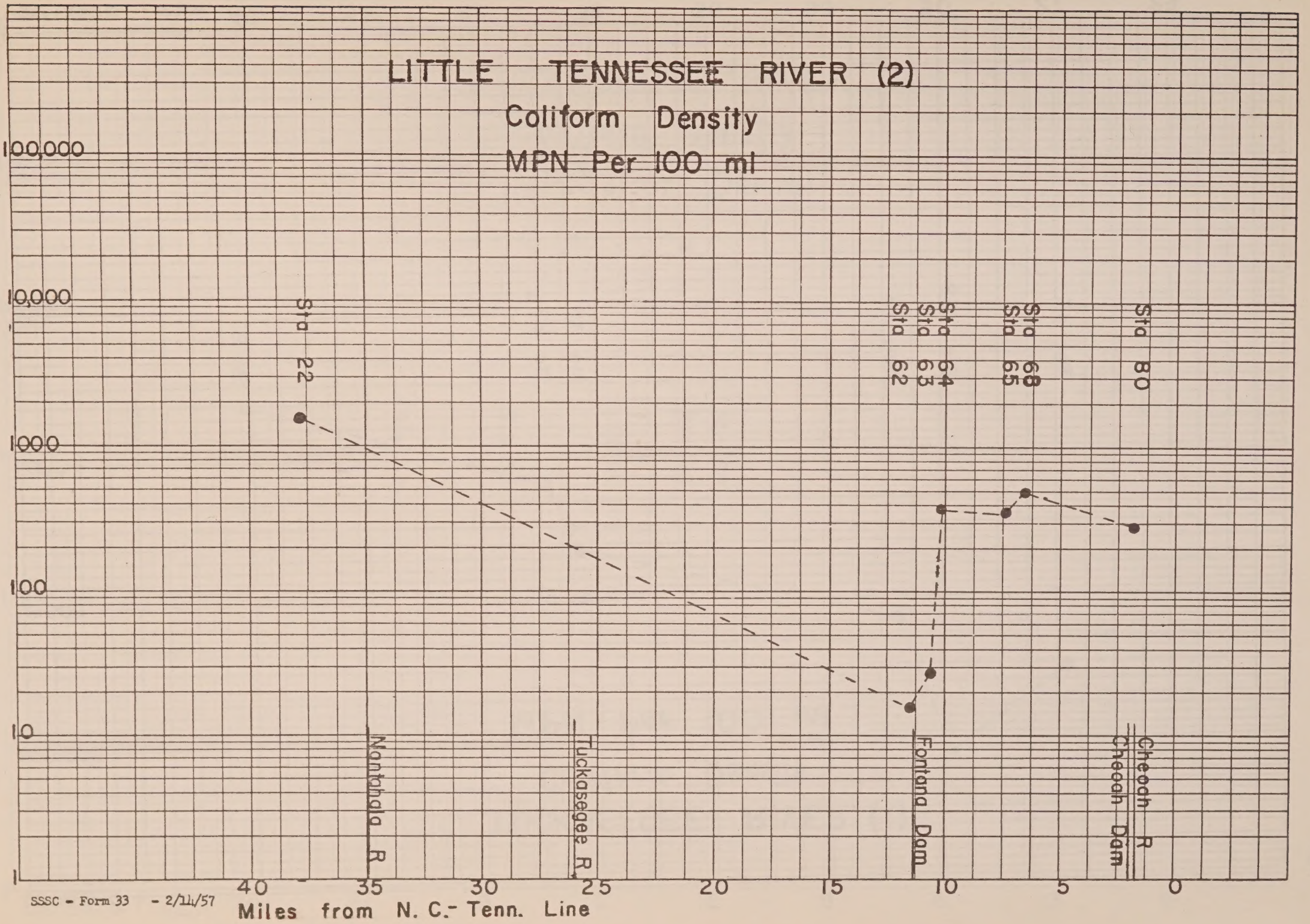

Average 5-Day 20° C BOD ppm
35
30
25
20
15
10
5
0
TUCKASEGEE RIVER (2)
DO & BOD Profile
Sta 60
Sta 58
Sta 56
Sta 55
Sta 49
Sta 48
DO
DO
BOD
0
3
6
9
12
15
18
21
24
Miles from Mouth
100
90
80
70
60
50
40
30
20
10
Percent Saturation of DO


Average 5-Day 20° C BOD ppm
210
180
150
120
90
60
30
0
SCOTT CREEK
DO & BOD Profile
Sta 45
Sta 44
Sta 43
Sta 42
Sta 40
Sta 39
Sta 38A
DO
BOD
91%
91%
0
1
2
3
4
5
6
Miles from Mouth
90
80
70
60
50
40
30
20
10
0
Percent Saturation of DO

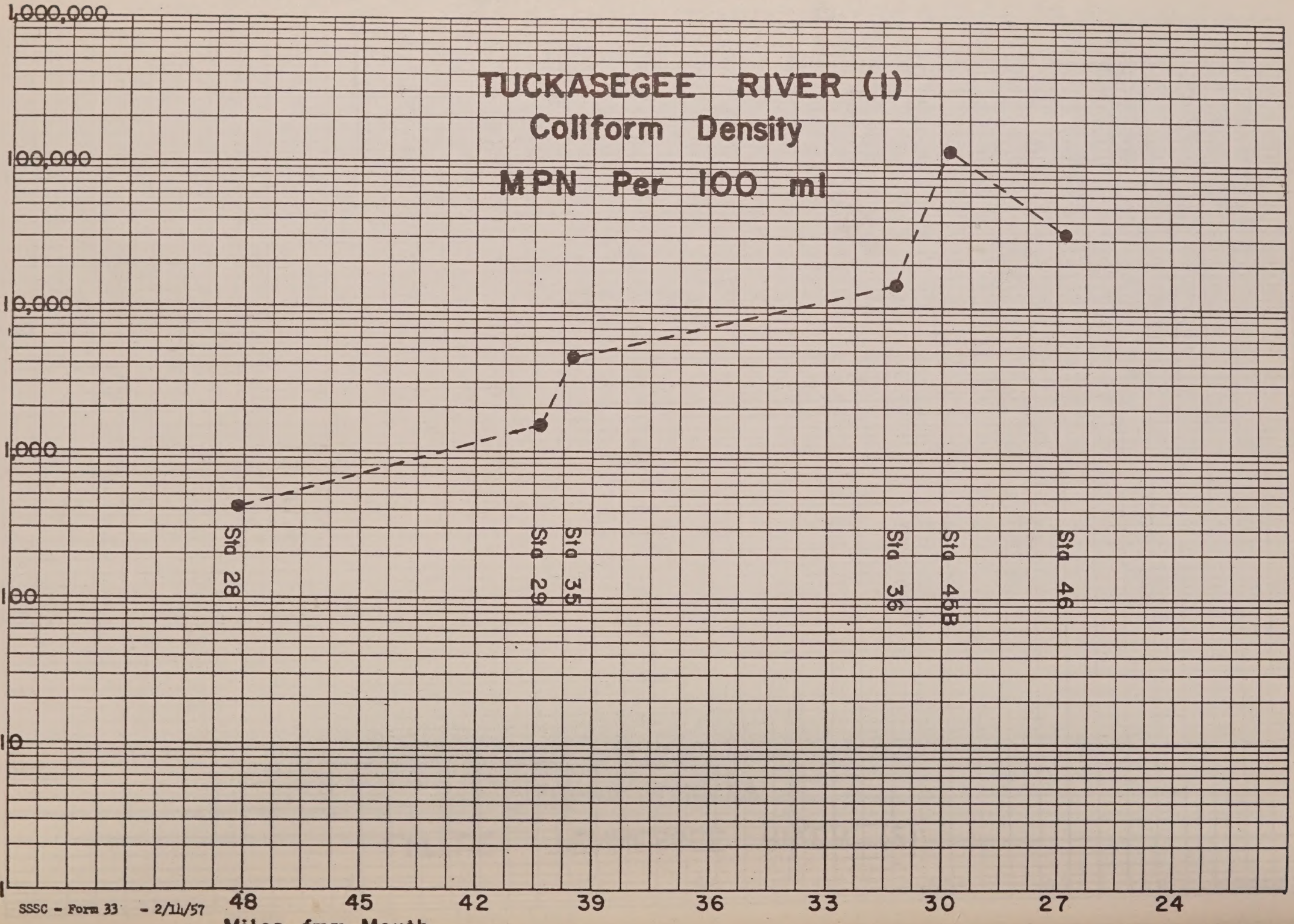


SSSC - Form 33 - 2/14/57

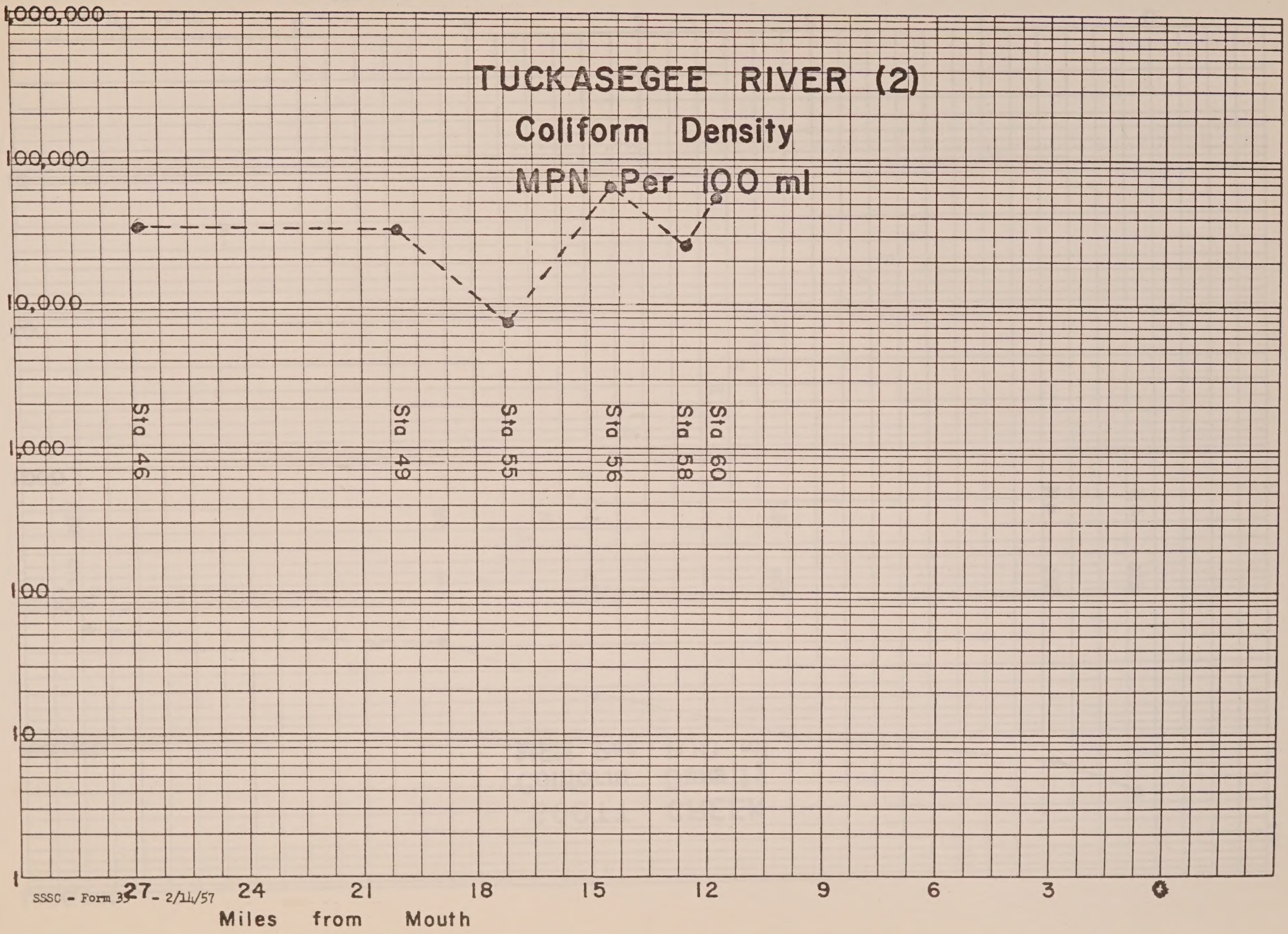

LITTLE TENNESSEE RIVER (1)
Coliform Density
MPN Per 100 ml
100000
10000
1000
100
10
1
Sta 22
Sta 18
Sta 17
Sta 16
Sta 5
Sta 1
Cowee Cr
Cullasaja R
40
45
50
55
60
65
70
75
80
Miles from N. C.-Tenn. Line
SSSC - Form 33 - 2/11/57



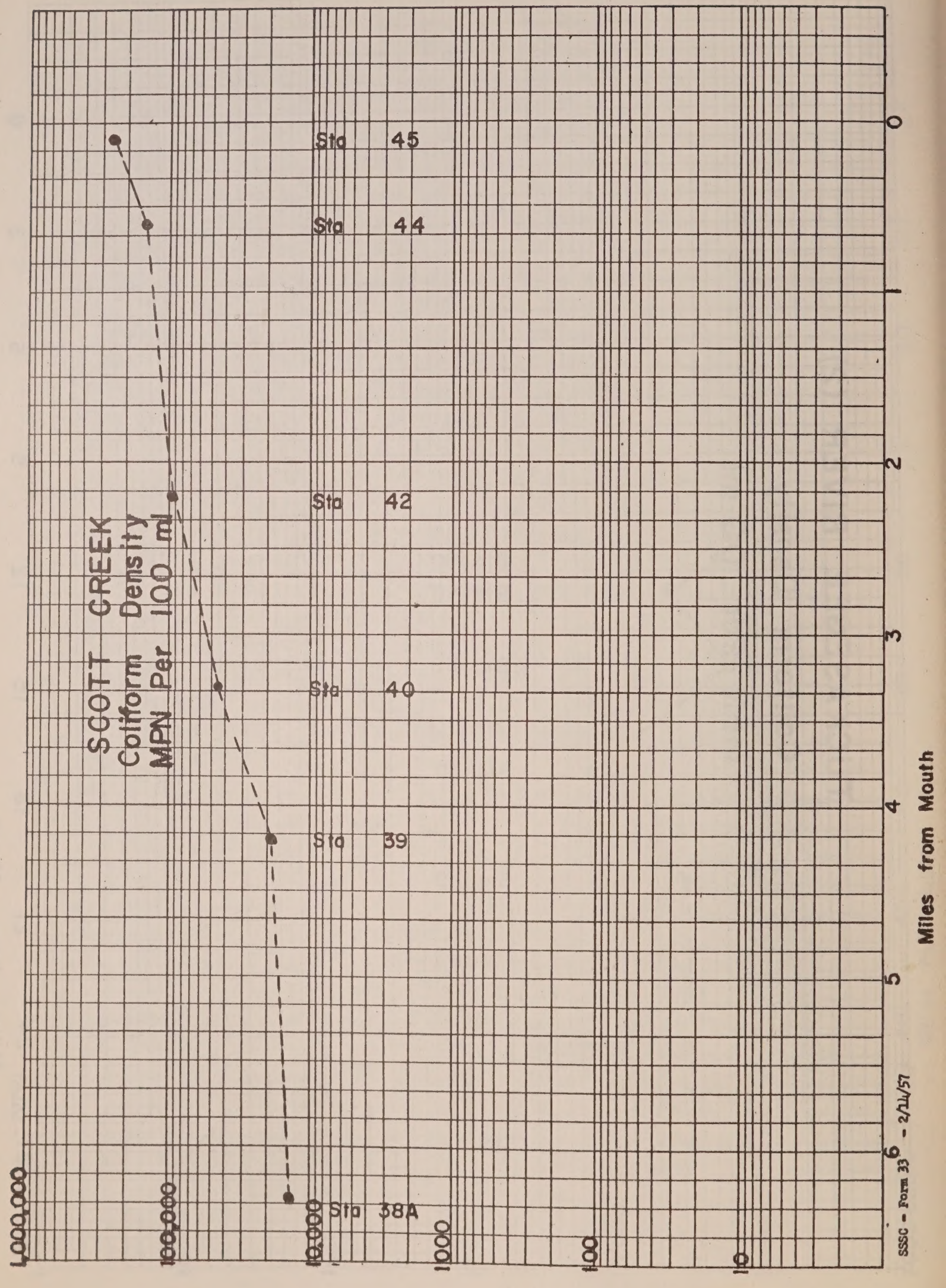
SSSC - Form 33 - 2/11/57

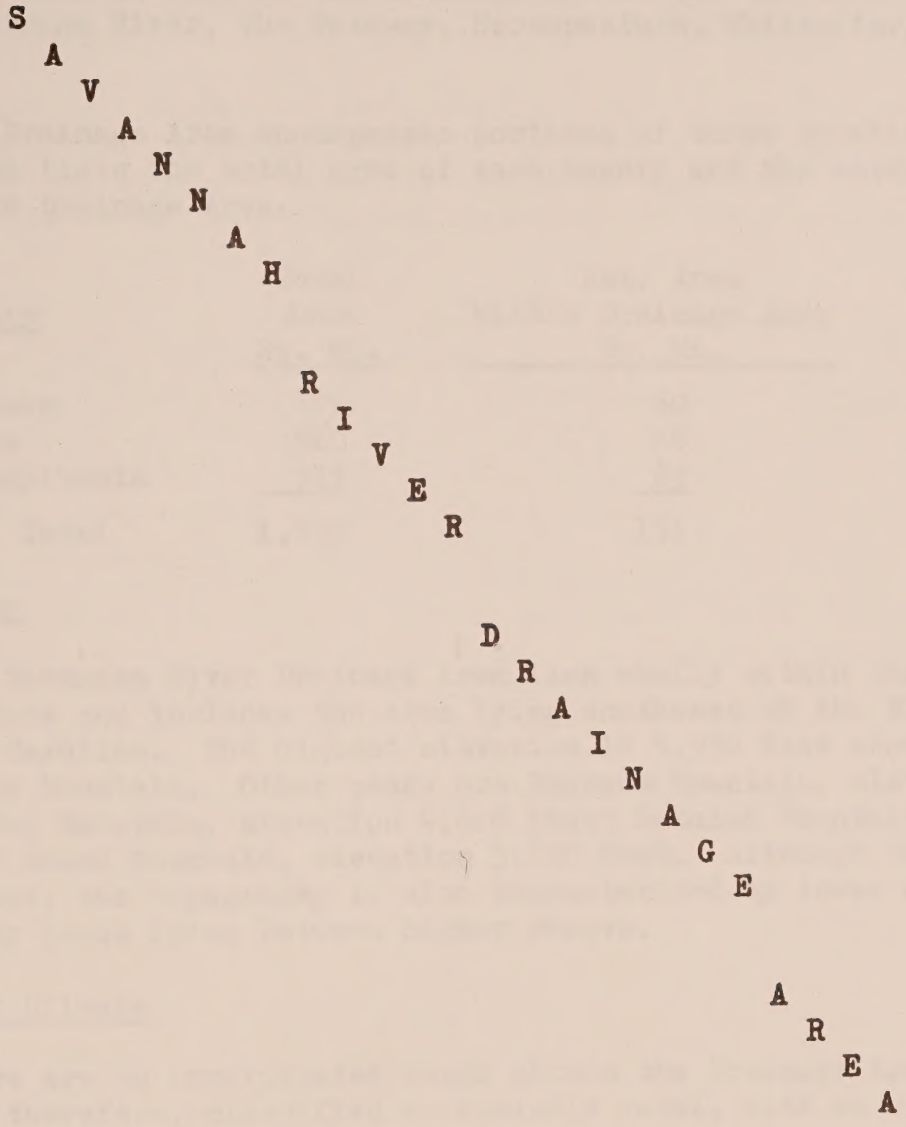


SSSC - Form 33 - 2/14/57



SSSC - Form 35 - 2/11/57


SCOTT CREEK
Coliform Density
MPN Per 100 ml
Sta 45
Sta 44
Sta 42
Sta 40
Sta 39
Sta 38A
1,000,000
100,000
10,000
1000
100
10
0
1
2
3
4
5
6
Miles from Mouth
SSSC - Form 33 - 2/14/57


SAVANNAH
RIVER
DRAINAGE
AREA

GENERAL DESCRIPTION

The Savannah River Drainage Area, encompassing an estimated area of 151 square miles, is located in the southwestern part of the State between the lower portions of the French Broad and Little Tennessee River Basins and the North Carolina-Georgia and North Carolina-South Carolina State Lines. The Drainage Area comprises all of the area in North Carolina which drains to the Savannah River in South Carolina. In view of the similarity of this small section of the State to the Little Tennessee River Basin, and for convenience, it has been included in this report.

The chief streams in the drainage system are the Chattooga River, East Fork Chattooga River, the Toxaway, Horsepasture, Whitewater, and Thompson Rivers.

The Drainage Area encompasses portions of three counties. The following tabulation lists the total area of each county and the estimated area lying within the Drainage Area.

County	Total Area Sq. Mi.	Est. Area Within Drainage Area Sq. Mi.	Per Cent In Drainage Area
Jackson	499	60	12
Macon	520	28	6
Transylvania	379	63	17
Total	1,398	151	

Topography

The Savannah River Drainage Area lies wholly within the mountain region of the State and includes the area lying southwest of the Blue Ridge Mountains in North Carolina. The highest elevation is 4,930 feet above sea level at Whitesides Mountain. Other peaks are Hogback Mountain, elevation 4,777 feet; Chimney Top Mountain, elevation 4,618 feet; Satulah Mountain, elevation 4,543 feet; and Round Mountain, elevation 3,700 feet. Although the entire area is mountainous, the topography is also characterized by lower mountains or hills and valley lands lying between higher ranges.

Cover and Climate

There are no incorporated towns within the Drainage Area. The entire area is, therefore, classified as strictly rural, with an estimated population of 1,500. The concentration of population centers around the south portion of the Town of Highlands and the Community of Cashiers.

The mountainous terrain has an 85 percent forest coverage, of which a large portion is virgin timber. Approximately 35 percent, or 34,000 acres of the area, is contained in the Nantahala National Forest, while many thousands of acres are privately-owned forest lands.

The year-round average temperature for the drainage area is generally cool in comparison to other sections of the State. For instance, the average temperature for the Savannah River Drainage Area for the first nine months of 1959 was 55.5°F, and the average yearly temperature for 1958 was 51.4°F, which was slightly lower than the average yearly temperature of 53.6°F. The average temperatures encountered during the sampling period were 63.3°F. This was

slightly higher than the average, because the samples were collected during the months of July, August, and September. The difference between the high and low temperatures was rather extreme, ranging from a high of 87°F on June 31, 1959, to a low of 1°F at the Highlands Station on January 17, 1959.

No major interruptions of the sampling program occurred during the study due to extreme heavy flow. Although there were several days on which heavy rainfalls occurred, the runoffs were quick and the streams soon returned to their normal stage. The Savannah River Drainage Area is in the high rainfall area of the State. The total rainfall for the first nine months of 1959 amounted to 60.32 inches, or an average of 7.48 inches per month. The monthly average during the sampling period was 8.75 inches, with the heaviest of 16.59 inches occurring in July.

Some snow was recorded at the Highlands Station during the early and late months of the year, but there were no heavy accumulations. Snow and ice formations in the mountains apparently had no ill effect upon the streams and served only to increase the flow in the spring when melting began.

Stream Flow

Throughout the Savannah River Drainage Area, there were 14 temporary gaging stations established to obtain flows in connection with the stream sampling program. Since there are no permanent stations within the area, it is somewhat difficult to compare the flows during the sampling period with normal flows.

General flow data for each of these stations are available through the offices of the United States Geological Survey at Raleigh, North Carolina, and Asheville, North Carolina.

ECONOMIC DEVELOPMENT

Population

The population of the Savannah River Drainage Area is estimated to be approximately 10 per square mile, since a major portion of the area is in forest lands and is, therefore, sparsely populated. According to this estimation, the total area of 151 square miles has a population of approximately 1,500. The population of the area is increased greatly during the summer months due to the influx of tourists and summer residents. The entire area is classified as rural since the largest concentration of population is in the Town of Highlands and the Community of Cashiers during the summer season. There are 4 townships which are wholly, or partially within the drainage area.

Industry

The Savannah River Drainage Area can be credited with having a very unusual industry within its bounds. A mink farm which breeds and raises mink for fur has grown to be one of importance in this area. The same company which owns and operates the mink farm also owns and operates two private trout hatcheries, one located on Logan Creek and one on East Fork Chattooga River, in which trout are hatched and raised for stocking, and for pan purposes.

Other industries consist of small saw mills. Some agriculture is carried on; however, the rugged terrain does not lend itself to extensive cultivation.

Tourist business during the summer is probably the largest from the standpoint of revenue, since there are several fine and famous inns and lodges in the area as well as numerous summer homes scattered throughout the mountains.

There are no manufacturing establishments listed in the area; therefore, it might be said that the per capita income is very low as compared with areas where manufacturing establishments are present.

Electric Power

Power demands in the drainage area are served by the Nantahala Power and Light Company. There are no power installations in the area. Power is generated elsewhere and brought in by electric transmission lines.

It appears that the general terrain in the drainage area is well adapted to the development of hydroelectric power; however, no development has taken place.

Forest Resources

The Savannah River Drainage Area includes approximately 85 percent forest land. The State and Federal Governments own approximately 35 percent of the forest land, of which approximately 34,000 acres is contained in the huge Nantahala National Forest.

All public forest land is not available for commercial timber cutting. Cutting operations are not permitted within the boundaries of parks, recreational areas, memorial forests, and municipal watersheds. There are many

acres of rock outcrops, cliffs, and mountain balds, which are classified as non-commercial forest land because of poor site conditions. Timber and wood products provide some industry in the area, as indicated by a number of small sawmills throughout the area. The following is a tabulation of some of the forest uses listed in "Forest Survey Release No. 46, January 1956". The figures listed are totals for each county, portions of which lie in the Savannah River Drainage Area.

County	Total Forest Land Acres	Public Owned Forest Land - Acres	Saw Timber Million Board Ft.	Pulpwood Production 1955 Std. Cords
Jackson	275,100	44,400	512.9	31,791
Macon	271,400	140,700	543.2	18,715
Transylvania	220,600	86,100	509.0	18,356
Total	767,100	271,200	1,565.1	68,862

Agriculture

The chief crop in the area is corn, the greater part of which is used for feed purposes at home. Truck crops such as potatoes, cabbage, beans, and others are of only slight commercial value in the drainage area. The entire area is in the Burley Tobacco Belt; however, very little tobacco is grown in the Savannah River Drainage Area. The poultry industry in the counties in the drainage area showed a slight increase from 1950 to 1954. While the number of farms reporting decreased, the number of chickens sold in 1954 increased sharply. In 1954, 514 farms sold 213,191 chickens, as compared with 1950 when 1,800 farms sold only 99,561 chickens.

The following is a tabulation, by counties, of money received by farms for different farm commodities:

County	Value of Chickens Sold - 1954	Value of 11 Principal Crops - 1954	Value of Livestock - 1954
Jackson	$40,785	$ 821,260	$ 403,630
Macon	99,667	1,083,270	502,502
Transylvania	52,216	545,280	396,212
Total	$192,668	$2,449,810	$1,302,344

Note: Figures are for the entire county, of which a portion is contained in the Savannah River Drainage Area.

Fish and Wildlife

Fishing is extensive throughout the Savannah River Drainage Area. It is reported that pike, catfish, bass, bream, and crappie are found in the waters of the area; also trout fishing is extensive and nearly all of the larger streams have been designated as trout waters by the N. C. Wildlife Resources Commission. The Commission annually stocks many of the streams in the area with trout, as well as working with the U. S. Forest Service in the management of additional trout streams within the National Forest.

There are a number of small private lakes in the area which contain fish of many species and in large numbers; however, public fishing is done in the larger streams.

Mountain Trout Fishing

Because of the importance of mountain trout fishing in this area, special attention is given to this species regarding their habitats and requirements.

The mountain trout group includes several types, the most widely known being the rainbow trout, brown trout, and brook trout, all of which are very highly-prized game fish. Rainbow trout are usually found in more abundance, while brown trout are generally the most sought after by fishermen because they are more difficult to land, and generally heavier in weight. Brown trout of weights up to seven pounds are not uncommon. These types of fish are abundant in the Savannah River Drainage Area because the cool, clean, and fast-moving waters are adapted to their propagation and growing conditions. A cool temperature is probably the most important of the conditions needed with a high oxygen content next. Temperature not exceeding 75°F is necessary for all trout producing streams, while 5 ppm of dissolved oxygen should be maintained, although life can be sustained in waters containing as low as 3.0 ppm dissolved oxygen if the temperature is lower. Other important characteristics necessary for these waters are a CO_2 content not exceeding 6 - 7 ppm, a maximum methyl orange alkalinity of 150 ppm, and a low turbidity. It is necessary for the trout to find a spawning area where the water is moving fast and has a rocky bottom. The eggs are laid in the gravel on the stream bed from 2 to 4 inches below the surface and are covered with gravel. The hatching period is rather long and even a small amount of silt in the water over a period of several months could cover the eggs enough to kill them. Heavy silt will also tend to choke out aquatic life upon which the trout depends for 60 percent of its food.

Because mountain trout fishing is so popular in this area, the N. C. Wildlife Resources Commission has designated various streams as "Trout Waters" and they are protected as such. These streams are noted as trout waters in the Table No. 6-S: Recommended Classifications.

Hunting

The entire area encompassing the Savannah River Drainage Area affords an abundance of game for the big game hunter as well as small game and wild fowl. While there are no wildlife management areas within the drainage system, bear and deer are plentiful and afford sport for the big game hunter. Small game, such as rabbit, squirrel, raccoon, and opossum are plentiful in the mountain area as are grouse, wild turkey and pheasant in the wild fowl class. Muskrats are trapped as well as beaver.

Mineral Resources

Considerable tonnages of asbestos have been mined from numerous small deposits near Cashiers and Lake Toxaway in southern Jackson and Transylvania Counties and in the extreme southern part of Macon County. Corundum, an abrasive, has been found in one section of the Drainage Area, while non-commercial deposits of olivine, feldspar, talc, kaolin, and vermiculite have also been found. Of the precious stones, only amethyst has been reported in several sections.

Parks and Recreation

Thousands of vacationers and motorists visit the Savannah River Drainage Area each year. The hundreds of acres of wooded mountain lands, with their many miles of trout streams, hiking trails and bridal paths, and picnicking areas offer relaxation and "a feel of nature".

The most popular scenic attraction in the area is Whiteside Mountain, elevation 4,930 feet above sea level, which is provided with picnic tables for the public. There are many other roadside picnic areas available along the highways and forest service roads. Cashiers Valley and the Town of Highlands area, with their luxurious inns, hotels, country clubs, and summer homes nestled in the mountain coves, and valleys, are among the chief mountain resort areas of the State.

The High Hampton Inn and Country Club are probably the best known of the resort and recreational areas. Hampton Lake, on Fowler Creek, is used for bathing by the guests of the Inn only. While no samples of water were collected from this lake, there is no known pollution on the watershed and the water therein should be quite satisfactory for the purpose of bathing. The Sapphire Valley Inn and Golf Club are also popular and well-known for their recreational facilities. A swimming pool is used for bathing. In addition to bathing, both of these inns provide recreation in the form of horseback riding, hiking, and golfing. The Sapphire Valley Inn and Golf Club will be discussed further under "General Survey Findings".

There is one summer camp for girls in the Drainage Area, Camp Merrie-Woode, which is located in Jackson County near Cashiers. This camp, shown on Map No. 2, is described as follows:

Camp Merrie-Woode is located in the Savannah River Drainage Area in what is known as Cashiers Valley. It is a privately-owned camp for girls. The Camp contains 60 acres and 55 buildings which accommodate 159 girls and a staff of 60. Drinking water is obtained from Trays Island Creek and is chlorinated. The domestic sewage is treated by means of a septic tank and nitrification fields. Fairfield Lake, which is fed by Trays Island Creek, is used for swimming and fishing by campers.

Samples of water were collected for bacterial examination from Trays Island Creek above Fairfield Lake and from the lake at the bathing area. The water in the stream above the lake contained coliform bacteria in numbers well within the limits normally accepted as being safe for outdoor bathing waters. One sample collected from the lake at the bathing area, under high runoff conditions, contained 2,300 (MPN) coliform bacteria per 100 ml. which is higher than desirable. It is believed that, while these bacteria were contributed in part by the bathers using the lake, they were the result of surface drainage for the most part. The watershed immediately above the Camp bathing area was found to be free from pollution at the time of the survey; however, investigation in the latter part of June, 1959 showed that partially treated sewage was being discharged into the lake from the Sapphire Valley Inn sewage treatment system at a point near the dam about one mile below the Camp bathing area. Upon advising the Inn management of this situation, prompt action was taken by the owner to revamp the sewage treatment system and there was no further discharge of sewage into the lake from and after July 15, 1959. Three samples of water collected from Trays Island Creek a short distance below the dam and the previous pollution, beginning on July 20, 1959, did not show any undue increase in the numbers of coliform bacteria in the creek water. If all sewage is kept out of the lake, it should continue to be safe for bathing.

Transportation

U. S. Highway 64 crosses the area from north to south, while N. C. Highway 107 crosses it from east to west. Secondary roads connect the rural areas with the main highways, affording access to all points.

There are no private airports in the area and commercial air transportation is not available closer than the Asheville-Hendersonville Airport and that at Knoxville, Tennessee. No railroad transportation is available.

GENERAL SURVEY FINDINGS

The Savannah River Drainage Area consists of the Chattooga, East Fork Chattooga, Whitewater, Toxaway, Horsepasture, and Thompson River drainage areas.

There are two semi-public surface water supplies and a similar ground water supply in the Drainage Area worthy of mention. Camp Merrie-Woode supplies a population of 225 with 22,000 GPD from Trays Island Creek after chlorination, while the Sapphire Valley Inn serves a population of 100 and the swimming pool with 8,000 GPD from Intake Branch. This water is also chlorinated. In addition, the Sapphire Valley Golf Club uses 8,000 GPD of raw water from Intake Branch for irrigating the greens. High Hampton Inn and Country Club derives its water supply from a well which serves a population of 250 with 25,000 GPD. The Cashiers School uses a well to supply an enrollment of 134 with domestic water. The Cashier Valley Mink Farms uses an unknown amount of water from a well for both domestic and industrial purposes.

Fairfield Lake is used for bathing at Camp Merrie-Woode, while Hampton Lake is so used at the High Hampton Inn and Country Club.

The various water and land uses, together with data relative to their uses, are summarized in Table No. 2-S, Semi-public Surface Water Supplies; Table No. 3-S, Semi-public Ground Water Supplies; Table No. 4-S, Schools; Table No. 5-S, Analytical Results; and Table No. 6-S, Recommended Classifications. Table No. 1-S lists the sampling stations in downstream order, while both maps Nos. 1 and 2, in the section devoted to the Little Tennessee River Basin, show the locations of the sampling stations.

There were only two sources of pollution found at the time of the survey which are worthy of discussion. One was corrected prior to the beginning of the stream sampling program, while the other was not deemed to be significant under the conditions studied. These sources of pollution are described as follow:

Cashiers Valley Mink Farms, located on Logan Creek, is engaged in raising mink for pelt purposes. Approximately 3,500 mink are kept in wire cages, which are in batteries under long sheds for protection from the weather. Droppings from the mink fall to the ground beneath the cages. Provisions were being made to provide leaching ditches to drain the liquid from the area beneath the pens to a central tank or pit which in turn was to drain into the treatment system described below. In addition, an area is provided for slaughtering an occasional horse for feed for the mink. This consists of a large shed with a concrete floor sloped to drain to a catch basin. The floor washings from animal slaughter and utensil washings drain to the catch basin, thence to a series of tanks constructed of railroad ties, or logs, the effluent from which flows to Logan Creek. Domestic sewage is discharged to a septic tank and a nitrification field.

The effluent from the industrial waste treatment system was clear and did not create any objectionable conditions in the stream below the point of discharge of this waste under the conditions prevailing during the stream studies. The average dissolved oxygen content was 7.6 ppm, while the average coliform bacteria content was 11,000 (MPN) per 100 ml. which was considerably higher than the numbers of such bacteria found in the creek above the mink farm; however, since there are no downstream water supplies or bathing areas, this does not appear to create a present problem. Nevertheless, the management should pay close attention to the effluent from this operation and be prepared to add additional facilities, if necessary.

Sapphire Valley Inn and Golf Club comprise a very popular mountain resort in what is known as Sapphire Valley near the Community of Cashiers. The utilities serve an average population of 100 including both the guests and the staff. Water from Intake Branch serves the Inn, the Golf Course, and the swimming pool as has been mentioned previously. The domestic sewage at the Golf Course is discharged to a septic tank and nitrification field, while that from the Inn is also being discharged to a septic tank and nitrification field at the present time. However, at the time of the survey in the latter part of June, 1959, the domestic sewage from the Inn was being discharged to the septic tank and thence to Fairfield Lake at a point near the dam due to a break in the line connecting the septic tank to a sand filter which was normally on the line between the septic tank and the lake. When this situation was brought to the attention of the management, prompt steps were taken to remove this pollution from the lake by repairing the line break and replacing the sand filter with a nitrification field.

As noted previously in this report, samples of water collected from the stream below the dam of Fairfield Lake and the previous pollution did not show an undue increase in the numbers of coliform bacteria in the creek water. The management of Sapphire Valley Inn is to be commended for the prompt action taken to protect this lake which is used for bathing at Camp Merrie-Woode. As stated previously, if all sewage is kept out of the lake, it should continue to be safe for bathing.

TABLE 1-S

SAMPLING POINTS AND GAGING STATIONS
SAVANNAH RIVER DRAINAGE AREA

Sta. No.		Stage Ref.	Miles from State Line or Mouth of Tributary	Drainage Area in Sq. Mi.
1-S	Chattooga River near Highlands, N. C.	R.P.	1.9*	22.9
	Chattooga River at N. C.-Georgia State Line	-	0*	32.4
2-S	East Fork Chattooga River near Cashiers, N. C. (N. C.-S. C. State Line)	R.P.	0*	2.22
4-S	Clear Creek at Highlands, N. C.	R.P.	0.7*	5.62
	Clear Creek at N. C.-Georgia State Line	-	0*	-
	Overflow Creek at mouth of East Fork Overflow Creek	-	0.9*	-
3-S	East Fork Overflow Creek near Highlands, N. C.	R.P.	2.4a	2.98
	Overflow Creek at N. C.- Georgia State Line	-	0*	-
5-S	Big Creek near Highlands, N. C.	R.P.	1.6*	2.97
	Big Creek at N. C.-Georgia State Line	-	0*	-
6-S	Toxaway River at Toxaway Falls, N. C.	R.P.	7.4*	7.79
	Toxaway River at N. C.-S. C. State Line	-	0*	-
	Horsepasture River at mouth of Logan Cr.	-	12.8*	-
7-S	Logan Creek at Cashiers, N. C.	R.P.	0.7a	1.09
8-S	Logan Creek near Cashiers, N. C.	R.P.	0.2a	2.67
	Horsepasture River at mouth of Intake Branch	-	11.6*	-
9-S	Intake Branch at Sapphire, N. C.	R.P.	3.5a	0.17
	Horsepasture River at mouth of Trays Island Creek	-	11.0*	-
10-S	Trays Island Creek at Camp Merrie-Woode at Sapphire, N. C.	R.P.	1.5a	1.24
11-S	Trays Island Creek (Long Branch) below Fairfield Lake near Cashiers, N. C.	R.P.	0.1a	-
12-S	Horsepasture River near Lake Toxaway, N. C.	R.P.	5.3*	24.1
	Horsepasture River at N. C.-S. C. State Line	-	0*	-
14-S	Whitewater River near Lake Toxaway, N. C.	R.P.	1.0*	12.9
	Whitewater River at N. C.-S. C. State Line	-	0*	-
13-S	Thompson River near Lake Toxaway, N. C.	R.P.	3.7*	2.56
	Thompson River at N. C.-S. C. State Line	-	0*	-

* Miles from N. C.-S. C. or N. C.-Georgia State Line.
a Miles from mouth of tributary.

Stage Reference
R.P. - Reference Point.

TABLE 2-S

SEMI-PUBLIC SURFACE WATER SUPPLIES

SAVANNAH RIVER DRAINAGE AREA

Location	Est. Pop. Served	Est. Comsumption MGD	Ownership	Source of Supply	Impounded	Design Capacity M.G.D.	Treatment
Camp Merri-Woode	225	0.022	P	Trays Island Creek	No	-	Chlorination
Sapphire Valley Inn	100	0.008	P	Intake Branch	No	-	Chlorination
Sapphire Valley Golf Club	-	0.008	P	Intake Branch	No	-	None

TABLE 3-S

SEMI-PUBLIC GROUND WATER SUPPLIES

SAVANNAH RIVER DRAINAGE AREA

Location	Pop. 1950	Est. Pop. Served	Ownership	Est. Comsumption M.G.D.	No. of Wells	Est. Total Yield M.G.D.	Date Installed	Treatment
High Hampton Inn and Country Club	-	250	P	0.025	1	0.086	-	None
Industrial								
Cashiers Valley Mink Farms	-	-	P	-	1	-	-	None

TABLE 4-S

SCHOOLS

SAVANNAH RIVER DRAINAGE AREA

Name of School	Enrollment	Water Supply (type)	Lunch Room	Type of Treatment	Receiving Stream
Jackson County					
Cashiers School	134	Well	Yes	Septic Tank - Sand Filter Trench	Chattooga River Trib.

TABLE 5-S

ANALYTICAL RESULTS

SAVANNAH RIVER DRAINAGE AREA

Station 1-S - Located on Chattooga River to define quality of water entering South Carolina. Drainage Area (sq. mi.) 2.29

Date Collected 1959	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Colif. M.P.N. per 100 ml.
7-20	M	1315	-*	18	41	30	6.8	0	5	3	0	8.6	90	1.7	-*	930
8-13	Th	1130	40	18	24	7	7.2	0	8	5	0.5	8.7	91	1.0	270	930
9-1	T	1800	43	21	31	5	7.2	0	8	8	0.5	7.9	88	0.6	170	230
Average				19	32	15	6.8 to 7.2	0	7	5	0	8.4	90	1.1		700

* Flow indeterminate above maximum stage.

Station 2-S - Located on East Fork Chattooga River below Cashiers Valley Trout Farm and above South Carolina State Line. Drainage Area (sq. mi.) 2.22

7-20	M	1220	9.0	17	9	8	6.8	0	5	3	0	8.2	84	1.5	91	9300
8-13	Th	1200	3.8	18	10	3	6.9	0	7	4	0.5	8.3	87	1.1	28	4300
9-1	T	1815	4.5	18	18	5	6.9	0	6	8	0	7.8	82	0.8	24	930
Average			5.8	18	12	5	6.8 to 6.9	0	6	5	0	8.1	84	1.1	48	4800

Station 3-S - Located on East Fork Overflow Creek to define quality of water entering Georgia. Drainage Area (sq. mi.) 2.98

7-20	M	1545	8.2	17	15	15	6.7	0	6	4	0.5	8.2	84	1.0	55	2300
8-13	Th	0900	3.2	16	10	5	6.9	0	6	3	0.5	8.8	88	0.4	9	430
9-1	T	1615	8.9	19	18	8	6.8	0	5	9	0	8.0	86	0.5	30	930
Average			6.8	17	14	9	6.7 to 6.9	0	6	5	0	8.3	86	0.6	31	1200

TABLE 5-S

ANALYTICAL RESULTS

SAVANNAH RIVER DRAINAGE AREA

Station 4-S - Located on Clear Creek to define quality of water entering Georgia. Drainage Area (sq. mi.) 5.62

Date Collected 1959	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
7-20	M	1525	34	19	39	100	6.6	0	4	4	0	7.9	84	1.3	300	4300
8-13	Th	0930	8.2	16	11	5	6.9	0	8	5	0	8.7	87	0.8	44	9300
9-1	T	1635	27	20	27	20	6.8	0	7	8	0	7.8	85	0.6	110	930
Average			23	18	26	40	6.6 to 6.9	0	6	6	0	8.1	85	0.9	150	4800

Station 5-S - Located on Big Creek to define quality of water entering Georgia. Drainage Area (sq. mi.) 2.97

7-20	M	1430	-*	19	28	90	6.6	0	4	3	0	8.2	88	1.9	-*	110,000
8-13	Th	1030	4.1	17	12	5	7.0	0	8	3	0	8.9	91	0.9	25	430
9-1	T	1720	9.3	20	23	7	7.0	0	6	8	0.5	7.7	84	0.6	38	430
Average				19	21	35	6.6 to 7.0	0	6	5	0	8.3	88	1.1		37,000

*Flow indeterminate above maximum stage.

Station 6-S - Located on Toxaway River to define quality of water entering South Carolina. Drainage Area (sq. mi.) 7.79

7-20	M	0645	21	15	20	15	6.6	0	6	4	0.5	8.3	82	1.1	160	430
8-13	Th	1810	9.7	21	13	3	6.9	0	8	3	0	7.9	88	0.6	39	43
9-1	T	0800	24	17	65	10	6.8	0	6	6	0	7.8	80	0.7	110	2300
Average			18	18	33	9	6.6 to 6.9	0	7	4	0	8.0	83	0.8	100	920

TABLE 5-S

ANALYTICAL RESULTS

SAVANNAH RIVER DRAINAGE AREA

Station 7-S - Located on Logan Creek above point of discharge of industrial waste at Cashiers Valley Mink Farm. Drainage Area (sq. mi.) 1.09

Date Collected 1959	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
7-20	M	1735	-*	18	18	10	6.8	0	6	4	0.5	8.0	84	0.9	-*	230
8-13	Th	1540	.62	16	10	7	6.4	0	6	3	0.5	8.3	83	0.4	2	93
9-1	T	1500	.62	19	18	5	6.9	0	9	7	0.5	7.8	83	0.3	1	430
Average				18	15	7	6.4 to 6.9	0	7	5	0.5	8.0	83	0.5		250

*Flow indeterminate above maximum stage.

Station 8-S - Located on Logan Creek below point of discharge of industrial waste at Cashiers Valley Mink Farm. Drainage Area (sq. mi.) 2.67

7-20	M	1745	-*	16	17	3	6.6	0	7	3	0.5	7.8	78	2.5	-*	9300
8-13	Th	1545	3.7	17	11	5	6.8	0	9	6	0	7.8	80	1.5	37	930
9-1	T	1425	4.3	18	27	8	6.8	0	9	8	0.5	7.2	75	1.5	44	24000
Average				17	18	5	6.6 to 6.8	0	8	6	0	7.6	78	1.8		11000

*Flow indeterminate above maximum stage.

Station 9-S - Located on Intake Branch above Sapphire Valley Inn and Golf Club water supply intake. Drainage Area (sq. mi.) 0.17

7-20	M	1045	-*	17	47	5	6.2	0	5	4	0.5	7.9	81	1.7	-*	930
8-13	Th	1300	.10	23	11	3	6.5	0	6	3	0	7.8	90	1.3	1	210
9-1	T	1315	.15	20	10	2	6.5	0	7	5	0	7.1	77	1.0	1	93
Average				20	23	3	6.2 to 6.5	0	6	4	0	7.6	83	1.3		410

*Flow indeterminate above maximum stage.

TABLE 5-S

ANALYTICAL RESULTS

SAVANNAH RIVER DRAINAGE AREA

Station 10-S - Located on Trays Island Creek (Long Branch) above Camp Merrie-wood water supply intake and above Fairfield Lake. Drainage Area (sq. mi.) 1.24

Date Collected 1959	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Col. M.P.N. /100 ml.	Bathing Area Col. M.P.N. /100 ml.
7-20	M	1840	-*	18	18	7	6.7	0	5	3	0.5	8.1	85	1.2	-*	930	2300
8-13	Th	1515	1.3	17	17	3	7.0	0	6	1	0	8.4	86	0.7	6	<3.6	93
9-1	T	1400	1.5	19	40	2	6.8	0	7	4	0.5	7.2	77	0.4	4	230	-
Average				18	25	4	6.7 to 7.0	0	6	3	0	7.9	83	0.8			

*Flow undetermined above maximum stage.

Station 11-S - Located on Trays Island Creek (Long Branch) below Fairfield Lake. Drainage Area (sq. mi.) 2.24

7-20	M	0940	-*	23	33	8	6.6	0	5	2	0	7.1	82	0.6	-*	430	
8-13	Th	1610	2.4	24	23	3	6.7	0	7	3	0	6.5	76	0.5	8	1500	
9-1	T	1100	2.9	23	23	2	6.7	0	6	6	0.5	6.7	77	0.6	12	230	
Average				23	26	4	6.6 to 6.7	0	6	4	0	6.8	78	0.6		720	

*Flow indeterminate above maximum stage.

Station 12-S - Located on Horsepasture River to define quality of water entering South Carolina. Drainage Area (sq. mi.) 24.1

7-20	M	0725	-*	19	13	15	6.9	0	6	3	0	8.1	87	1.2	-*	1500	
8-13	Th	1650	35	22	18	2	7.1	0	7	3	0	8.0	91	0.4	95	93	
9-1	T	1020	50	19	32	5	6.8	0	6	6	0	7.9	84	0.8	270	430	
Average				20	21	7	6.8 to 7.1	0	6	4	0	8.0	87	0.8		670	

*Flow indeterminate above maximum stage.

TABLE 5-S

ANALYTICAL RESULTS

SAVANNAH RIVER DRAINAGE AREA

Station 13-S - Located on Thompson River to define quality of water entering South Carolina. Drainage Area (sq. mi.) 2.56

Date Collected 1959	Day	Time	Discharge cfs	Temp. °C	True Color Units	Turbidity Units	pH Range	Alkalinity Phenol ppm	Alkalinity Total ppm	Hardness as $CaCO_3$ ppm	Chloride ppm	D. O. ppm	D. O. % Sat.	5-Day B.O.D. ppm 20°C	5-Day B.O.D. lbs/day 25°C	Coliform M.P.N. per 100 ml.
7-20	M	0745	-*	16	22	12	6.8	0	7	2	0	8.7	87	0.8	-*	430
8-13	Th	1745	5.0	17	15	8	7.0	0	8	3	0	8.5	87	0.3	10	430
9-1	T	0910	8.9	17	47	25	6.8	0	8	8	0	8.2	84	0.5	30	Sample broken
Average				17	28	15	6.8 to 7.0	0	8	4	0	8.5	86	0.5		

*Flow indeterminate above maximum stage.

Station 14-S - Located on Whitewater River to define quality of water entering South Carolina. Drainage Area (sq. mi.) 12.9

7-20	M	0820	-*	16	22	12	7.5	0	7	2	1	8.9	89	3.1	-*	930
8-13	Th	1720	33	19	12	5	6.9	0	7	3	0	8.4	90	0.9	200	230
9-1	T	0840	49	17	33	7	6.8	0	8	10	0	8.2	84	0.7	230	2,300
Average				17	22	8	6.8 to 7.5	0	7	5	0	8.5	88	1.6		1,200

*Flow indeterminate above maximum stage.

EXPLANATION OF TABLE 6-S, RECOMMENDED CLASSIFICATIONS

The tentative recommended classifications of the surface waters of the Savannah River Drainage Area are given in Table 6-S. These recommendations are considered to represent the best usages of the streams in the best interest of the public. They are submitted to all concerned for consideration at the public hearing and to the State Stream Sanitation Committee in its determination of the final classifications to be assigned.

* Any natural stream not noted in Table 6-S will carry the same classification as the stream to which it is tributary.

Key to Abbreviations Used in Table

Agri.	-	Agriculture	PA	-	Populated Area
DS	-	Domestic Sewage	Rec.	-	Recreation
F	-	Farmlands	SP	-	Slightly Polluted
GP	-	Grossly Polluted	W	-	Woodlands
IW	-	Industrial Waste	WS	-	Water Supply
N	-	Natural	WD	-	Waste Disposal
P	-	Polluted			

Brief Explanation of Water Classifications

Fresh Surface Waters

A-I - Water supply from uninhabited watersheds requiring only approved disinfection.

A-II - Water supply with approved complete treatment.

B - Bathing and recreation.

C - Fish and Wildlife Propagation.

D - Agriculture, including irrigation and livestock watering, drainage and industrial cooling and process water supply.

E - Navigation and disposal of sewage, industrial waste and other wastes with the provision that such disposal will not create an offensive condition.

Note: All streams which are designated trout waters are required to have a minimum dissolved oxygen content of 5.0 ppm.

TABLE 6-S

RECOMMENDED CLASSIFICATIONS
SAVANNAH RIVER DRAINAGE AREA

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
I. Chattooga River to N.C.-Georgia State Line	W	N	Fishing	Fishing	C	Trout Waters
A. Fowler Cr. to upper Dam at Hampton Lake	W, PA	N	Bathing	Bathing	B	Trout Waters High Hampton Inn Bathing Area
B. Fowler Cr. from upper Dam at Hampton Lake to mouth	W	N	Fishing	Fishing	C	Trout Waters
C. Green Creek	W	N	Fishing	Fishing	C	
D. Norton Mill Creek	W	N	Fishing	Fishing	C	
E. Cane Creek	W	N	Fishing	Fishing	C	Trout Waters
1. Holly Branch	W	N	Fishing	Fishing	C	
F. Ammons Branch	W	N	Fishing	Fishing	C	Trout Waters
G. Glade Creek	W	N	Fishing	Fishing	C	Trout Waters
H. Scotsman Creek	W	N	Fishing	Fishing	C	Trout Waters
1. Bryson Branch	W	N	Fishing	Fishing	C	
I. Fowler Creek	W	N	Fishing	Fishing	C	
1. Nicholson Licklog Creek	W	N	Fishing	Fishing	C	
a. Chester Branch	W	N	Fishing	Fishing	C	
J. Bad Creek to N.C.-S.C. State Line	W	N	Fishing	Fishing	C	
K. East Fork Chattooga River to N.C.-S.C. State Line	W	N	Fishing	Fishing	C	
L. Clear Cr. to N.C.-Georgia State Line	W, F	N	Fishing	Fishing	C	
1. Covefield Branch	W	N	Fishing	Fishing	C	
2. Cornel Branch	W	N	Fishing	Fishing	C	
3. Brooks Creek	W	N	Fishing	Fishing	C	
a. Tom Branch	W	N	Fishing	Fishing	C	
4. Henson Br. to N.C.-Georgia State Line	W	N	Fishing	Fishing	C	
5. Talley Mill Cr. to N.C.-Georgia State Line	W	N	Fishing	Fishing	C	
M. Overflow Cr. to N.C.-Georgia State Line	W	N	Fishing	Fishing	C	
1. East Fork Overflow Creek	W	N	Fishing	Fishing	C	Trout Waters
2. West Fork Overflow Creek	W	N	Fishing	Fishing	C	Trout Waters
a. Webb Branch	W	N	Fishing	Fishing	C	
b. Abes Creek	W	N	Fishing	Fishing	C	Trout Waters

TABLE 6-S

RECOMMENDED CLASSIFICATIONS
SAVANNAH RIVER DRAINAGE AREA

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
N. Big Creek to N.C.-Georgia State Line	W	N	Fishing	Fishing	C	Trout Waters
1. Edwards Creek	W, PA	N	Fishing	Fishing	C	
2. Blackrock Branch	W	N	Fishing	Fishing	C	
3. Little Creek	W	N	Fishing	Fishing	C	
4. Norton Branch	W	N	Fishing	Fishing	C	
O. Toxaway River to N.C.-S.C. State Line	W	N	Fishing	Fishing	C	
1. Mill Creek	W	N	Fishing	Fishing	C	
2. Deep Ford Creek	W	N	Fishing	Fishing	C	
3. Indian Creek	W	N	Fishing	Fishing	C	
4. Panther Branch	W, PA	N	Fishing	Fishing	C	
5. Bearwallow Creek	W	N	Fishing	Fishing	C	
6. Auger Fork Creek	W	N	Fishing	Fishing	C	
a. Maple Spring Branch	W	N	Fishing	Fishing	C	
7. Toxaway Creek	W	N	Fishing	Fishing	C	
a. Devils Hole Creek	W	N	Fishing	Fishing	C	
b. Ann Creek	W	N	Fishing	Fishing	C	
c. Aiken Creek	W	N	Fishing	Fishing	C	
d. Little Creek	W	N	Fishing	Fishing	C	
(1) Mill Creek	W	N	Fishing	Fishing	C	
e. Frozen Creek	W	N	Fishing	Fishing	C	
8. Rock Creek	W	N	Fishing	Fishing	C	
a. Bearpen Creek	W	N	Fishing	Fishing	C	
9. Cobb Creek to N.C.-S.C. State Line	W	N	Fishing	Fishing	C	
10. Bear Creek to N.C.-S.C. State Line	W	N	Fishing	Fishing	C	
11. Horsepasture River to N.C.-S.C. State Line	W	N	Fishing	Fishing	C	Trout Waters
a. Laurel Creek	W	N	Fishing	Fishing	C	
b. Rochester Creek	W	N	Fishing	Fishing	C	
c. Logan Creek	W	N	Fishing	Fishing	C	Trout Waters - Waste from Cashiers Valley Mink Farms
(1) Flatwood Branch	W	N	Fishing	Fishing	C	Trout Waters
(2) Right Prong	W	N	Fishing	Fishing	C	Trout Waters

TABLE 6-S

RECOMMENDED CLASSIFICATIONS
SAVANNAH RIVER DRAINAGE AREA

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
d. Intake Branch to Sapphire Valley Inn Water Supply Intake	W	N	W.S.	W.S.	A-I	Sapphire Valley Inn Watershed
e. Intake Branch from Sapphire Valley Inn Water Supply Intake to mouth	W	N	Fishing	Fishing	C	
f. Trays Island Creek to Camp Merrie-Woode Water Supply Intake	W	N	W.S.	W.S.	A-I	Camp Merrie-Woode Watershed
(1) Long Branch	W	N	W.S.	W.S.	A-I	Camp Merrie-Woode Watershed
g. Trays Island Creek from Camp Merrie-Woode Water supply intake to dam at Fairfield Lake	W	N	Bathing	Bathing	B	Camp Merrie-Woode Bathing Area
h. Trays Island Creek from Dam at Fairfield Lake to mouth	W	N	Fishing	Fishing	C	
i. Mud Creek	W	N	Fishing	Fishing	C	
j. Nix Creek	W	N	Fishing	Fishing	C	
k. Little Hogback Creek	W	N	Fishing	Fishing	C	
l. Hogback Creek	W	N	Fishing	Fishing	C	
m. Burlingame Creek	W	N	Fishing	Fishing	C	
n. Rock Creek	W	N	Fishing	Fishing	C	
o. James Creek	W	N	Fishing	Fishing	C	
p. Bearcamp Creek to N.C.-S.C. State Line	W	N	Fishing	Fishing	C	
12. Whitewater River to N.C.-S.C. State Line	W	N	Fishing	Fishing	C	Trout Waters
a. Silver Run Creek	W	N	Fishing	Fishing	C	
b. Little Whitewater Creek	W	N	Fishing	Fishing	C	
c. Democrat Creek	W	N	Fishing	Fishing	C	
d. Waddle Branch	W	N	Fishing	Fishing	C	
e. Corbin Creek	W	N	Fishing	Fishing	C	
f. Thompson River to N.C.-S.C. State Line	W	N	Fishing	Fishing	C	
(1) Reid Branch	W	N	Fishing	Fishing	C	
(2) Coley Creek to N.C.-S.C. State Line	W	N	Fishing	Fishing	C	

TABLE 6-S
RECOMMENDED CLASSIFICATIONS
SAVANNAH RIVER DRAINAGE AREA

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
P. Tallulah River to N.C.-Georgia State Line	W	N	Fishing	Fishing	C	
1. Deep Gap Branch	W	N	Fishing	Fishing	C	
2. Wateroak Creek	W	N	Fishing	Fishing	C	
3. Chimney Rock Branch	W	N	Fishing	Fishing	C	
4. Water Spout Branch	W	N	Fishing	Fishing	C	
5. Sassafras Branch	W	N	Fishing	Fishing	C	
6. Beech Creek to N.C.-Georgia State Line	W	N	Fishing	Fishing	C	